

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Sin J. Lee Examiner #: 7660 Date: 6-1-05
 Art Unit: 1752 Phone Number 301-21333 Serial Number: 10/679,367
 Mail Box and Bldg/Room Location: Rem. 9D66 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Bib attached

Inventors (please provide full names): _____ SCIENTIFIC REFERENCE BR
 SGI & Tech Inf. Ctr

Earliest Priority Filing Date: _____ JUN 2 REC'D

For Sequence Searches Only Please include all pertinent information (parent, child, divisional, or issued patent) along with the appropriate serial number.

Please search for the compound (1)
 shown in claim #1 as well as in claim #7
 (Please do not limit the search
 because there are too many hits)

STAFF USE ONLY

| | Type of Search | Vendors and cost where applicable |
|--|------------------------|-----------------------------------|
| Searcher: <u>K. Fuller</u> | NA Sequence (#) _____ | STN <u>✓</u> |
| Searcher Phone #: _____ | AA Sequence (#) _____ | Dialog _____ |
| Searcher Location: _____ | Structure (#) <u>2</u> | Questel/Orbit _____ |
| Date Searcher Picked Up: _____ | Bibliographic _____ | Dr. Link _____ |
| Date Completed: <u>6/14/05</u> | Litigation _____ | Lexis/Nexis _____ |
| Searcher Prep & Review Time: <u>20</u> | Fulltext _____ | Sequence Systems _____ |
| Clerical Prep Time: _____ | Patent Family _____ | WWW/Internet _____ |
| Online Time: <u>60</u> | Other _____ | Other (specify) _____ |

=> FILE REG

FILE 'REGISTRY' ENTERED AT 10:06:18 ON 14 JUN 2005

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Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 13 JUN 2005 HIGHEST RN 852200-37-4

DICTIONARY FILE UPDATES: 13 JUN 2005 HIGHEST RN 852200-37-4

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 18, 2005

Please note that search-term pricing does apply when conducting SmartSELECT searches.

*
* The CA roles and document type information have been removed from *
* the IDE default display format and the ED field has been added, *
* effective March 20, 2005. A new display format, IDERL, is now *
* available and contains the CA role and document type information. *
*

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. For more information enter HELP PROP at an arrow prompt in the file or refer to the file summary sheet on the web at:
<http://www.cas.org/ONLINE/DBSS/registryss.html>

=> FILE HCAPLUS

FILE 'HCAPLUS' ENTERED AT 10:06:24 ON 14 JUN 2005

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FILE COVERS 1907 - 14 Jun 2005 VOL 142 ISS 25

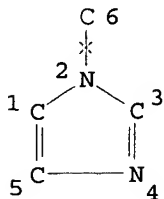
FILE LAST UPDATED: 13 Jun 2005 (20050613/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> D QUE
L7

STR



348,486 structures from
this query

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NODE ATTRIBUTES:
NSPEC      IS RC      AT      6
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

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GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 6

STEREO ATTRIBUTES: NONE

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L20          SCR 1993 AND 150
L22          SCR 1605 OR 1607
L24          348486 SEA FILE=REGISTRY SSS FUL L7 AND L20 AND L22
L26          348486 SEA FILE=REGISTRY ABB=ON L24 OR L24
L27          198487 SEA FILE=REGISTRY RAN=(,269718-01-6) ABB=ON L24 OR L24
L28          149999 SEA FILE=REGISTRY ABB=ON L26 NOT L27
L29          110641 SEA FILE=HCAPLUS ABB=ON L27
L30          8704 SEA FILE=HCAPLUS ABB=ON L28
L31          734 SEA FILE=HCAPLUS ABB=ON (L29 OR L30) (L)MOA/RL
L34          10 SEA FILE=HCAPLUS ABB=ON L31(L)?RESIST?(L) (RADIAT? OR PHOTO?
OR UV OR IR OR ULTRA? OR INFRA?)
L35          20 SEA FILE=HCAPLUS ABB=ON L31 AND ?RESIST?(5A) (RADIAT? OR
PHOTO? OR UV OR IR OR ULTRA? OR INFRA?)
L37          352 SEA FILE=HCAPLUS ABB=ON (L29 OR L30) AND ?RESIST?(5A) (RADIAT?
OR PHOTO? OR UV OR IR OR ULTRA? OR INFRA?)
L38          42 SEA FILE=HCAPLUS ABB=ON (L29 OR L30) (L)PREP/RL AND ?RESIST?(5A
) (RADIAT? OR PHOTO? OR UV OR IR OR ULTRA? OR INFRA?)
L39          58 SEA FILE=HCAPLUS ABB=ON L34 OR L35 OR L38
L40          43 SEA FILE=HCAPLUS ABB=ON L39 AND PHOTOG?/SC,SX
L44          3 SEA FILE=HCAPLUS ABB=ON L37 AND ALKALI?(3A) (CONTROL? OR
REGULAT?)
L45          44 SEA FILE=HCAPLUS ABB=ON L40 OR L44

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40 OR L44
44 CA references with utility

=> D L45 BIB ABS HITIND HITSTR 1-44

L45 ANSWER 1 OF 44 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2005:429276 HCAPLUS
TI Nitrogen-containing organic compound, resist composition and patterning
process
IN Watanabe, Takeru; Kinsho, Takeshi; Hasegawa, Koji; Takemura, Katsuya;
Noda, Kazumi; Kobayashi, Katsuhiko
PA Shin-Etsu Chemical Co., Ltd., Japan
SO U.S. Pat. Appl. Publ., 31 pp.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 1

KATHLEEN FULLER EIC 1700 REMSON 4B28 571/272-2505

PI US 2005106500 A1 20050519 US 2004-984933 20041110;
 PRAI JP 2003-384505 A 20031114

AB Chemical amplified resist compns. comprising nitrogen-containing organic compds.

having an aromatic carboxylic acid ester structure have an excellent resolution and provide a precise pattern profile and are useful in microfabrication using electron beams or deep-UV light.

IC ICM G03C001-492

INCL 430270100

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT **Photolithography**
Photoresists

(nitrogen-containing organic compound, resist composition and patterning process)

IT 22495-17-6P 47750-79-8P 79690-87-2P 192817-77-9P, Ethyl
 2-(1-pyrrolidinyl)benzoate 497057-34-8P 851705-95-8P 851705-97-0P
 851705-99-2P 851706-00-8P 851706-01-9P 851706-02-0P 851706-03-1P
 851706-04-2P 851706-05-3P 851706-06-4P 851706-07-5P

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); **PREP (Preparation)**; **USES (Uses)**

(nitrogen-containing organic compound, resist composition and patterning process)

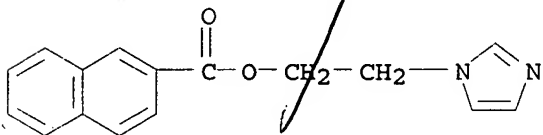
IT **851706-04-2P**

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); **PREP (Preparation)**; **USES (Uses)**

(nitrogen-containing organic compound, resist composition and patterning process)

RN 851706-04-2 HCAPLUS

CN 2-Naphthalenecarboxylic acid, 2-(1H-imidazol-1-yl)ethyl ester (9CI) (CA INDEX NAME)



L45 ANSWER 2 OF 44 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 2005:239250 HCAPLUS

DN 142:325829

TI Silver halide color photographic sensitive material showing excellent processing stability and pressure resistance

IN Arai, Kenji

PA Konica Photo Imaging Corporation, Japan

SO PCT Int. Appl., 62 pp.

CODEN: PIXXD2

DT Patent

LA Japanese

FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|--|------|----------|-----------------|----------|
| PI WO 2005024513 | A1 | 20050317 | WO 2003-JP10991 | 20030828 |
| W: BR, CN, ID, IN, JP, KR, MX, PH, PL, RU, SG, US, VN | | | | |
| RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR | | | | |

PRAI WO 2003-JP10991

20030828

AB The invention relates to a silver halide color photog. sensitive material that excels in processing stability and has been improved with respect to pressure resistance. In particular, a silver halide color photog. sensitive material comprising a support and, superimposed on one side thereof, a red-sensitive layer unit, a green-sensitive layer unit and a blue-sensitive layer unit, each of the units composed of two or more layers whose sensitivities are different from each other, and further a non-sensitive layer, characterized in that the ratio of amount of silver / mass of gelatin with respect to the layer of the highest sensitivity of the blue-sensitive layer unit is 0.50 or below, and that the thickness of dry blue-sensitive layer unit is $\leq 3.4 \mu\text{m}$.

IC ICM G03C001-74

ICS G03C007-00; G03C007-36

CC 74-2 (Radiation Chemistry, Photochemistry, and **Photographic** and Other Reprographic Processes)

IT 111285-72-4 330575-06-9 591227-72-4 753026-96-9
848073-81-4

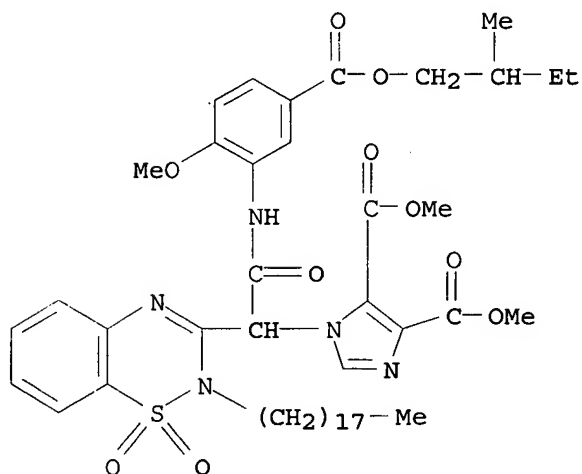
RL: MOA (Modifier or additive use); USES (Uses)
(yellow coupler; silver halide color **photog.** sensitive material showing excellent processing stability and pressure resistance)

IT 591227-72-4

RL: MOA (Modifier or additive use); USES (Uses)
(yellow coupler; silver halide color **photog.** sensitive material showing excellent processing stability and pressure resistance)

RN 591227-72-4 HCAPLUS

CN 1H-Imidazole-4,5-dicarboxylic acid, 1-[2-[[2-methoxy-5-[(2-methylbutoxy)carbonyl]phenyl]amino]-1-(2-octadecyl-1,1-dioxido-2H-1,2,4-benzothiadiazin-3-yl)-2-oxoethyl]-, dimethyl ester (9CI) (CA INDEX NAME)



RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L45 ANSWER 3 OF 44 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 2005:239249 HCAPLUS

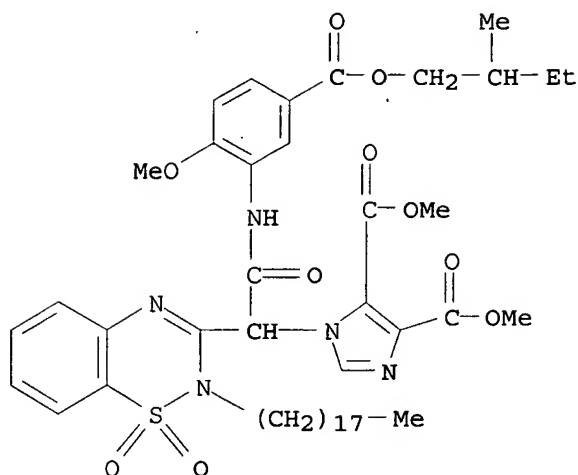
DN 142:325828

TI Silver halide color photographic sensitive material showing improved sensitivity and image quality

KATHLEEN FULLER EIC 1700 REMSON 4B28 571/272-2505

IN Sekiya, Tadanobu
 PA Konica Photo Imaging Corporation, Japan
 SO PCT Int. Appl., 66 pp.
 CODEN: PIXXD2
 DT Patent
 LA Japanese
 FAN.CNT 1

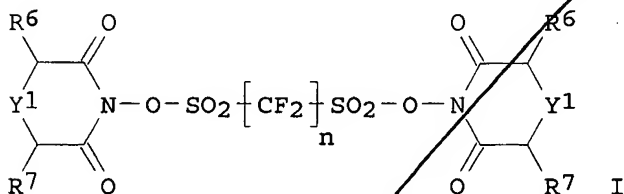
| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|---|-------------|-------------|-----------------|----------|
| PI | WO 2005024512 | A1 | 20050317 | WO 2003-JP10988 | 20030828 |
| | W: BR, CN, ID, IN, JP, KR, MX, PH, PL, RU, SG, US, VN RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR | | | | |
| PRAI | WO 2003-JP10988 | | 20030828 | | |
| AB | The invention relates to a silver halide color photog. sensitive material that is highly sensitive, realizing high image quality, and excels in resistances to natural radiation and hazardous gas. In particular, a silver halide color photog. sensitive material comprising a support and, superimposed thereon, at least one red-sensitive layer, green-sensitive layer, blue-sensitive layer and non-sensitive layer, characterized in that the ratio (Ag/S) of total amount of coating silver (Ag) (g/m ²) to ISO photog. speed (S) is in the range of 0.005-0.01, and that the ratio (hdB/hdT) of thickness of dry blue-sensitive layer (hdB) to total thickness of dry film excluding the support (hdT) is in the range of 0.18-0.20. | | | | |
| IC | ICM G03C001-74 | | | | |
| | ICS G03C007-36 | | | | |
| CC | 74-2 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes) | | | | |
| IT | 111285-72-4 | 330575-06-9 | 591227-72-4 | 753026-95-8 | |
| | 848073-81-4 RL: MOA (Modifier or additive use); USES (Uses) (yellow coupler; silver halide color photog. sensitive material showing improved sensitivity and image quality) | | | | |
| IT | 591227-72-4 RL: MOA (Modifier or additive use); USES (Uses) (yellow coupler; silver halide color photog. sensitive material showing improved sensitivity and image quality) | | | | |
| RN | 591227-72-4 HCAPLUS | | | | |
| CN | 1H-Imidazole-4,5-dicarboxylic acid, 1-[2-[[2-methoxy-5-[(2-methylbutoxy)carbonyl]phenyl]amino]-1-(2-octadecyl-1,1-dioxido-2H-1,2,4-benzothiadiazin-3-yl)-2-oxoethyl]-, dimethyl ester (9CI) (CA INDEX NAME) | | | | |



RE.CNT 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L45 ANSWER 4 OF 44 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2004:1125476 HCAPLUS
DN 142:65319
TI Acid generators and positively or negatively working radiation-sensitive
resin compositions containing the same
IN Ibata, Satoshi; Nagai, Tomoki; O, Isamu
PA JSR Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 63 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|------------------|------|----------|-----------------|----------|
| PI | JP 2004359590 | A2 | 20041224 | JP 2003-158808 | 20030604 |
| PRAI | JP 2003-158808 | | 20030604 | | |
| OS | MARPAT 142:65319 | | | | |
| GI | | | | | |



AB The acid generators comprise compds. having the structure of $\text{SO}_2(\text{CF}_2)_n\text{SO}_2$ ($n = 2-10$ integer), preferably, disulfonic acid onium salts $\text{SO}_3-(\text{CF}_2)_n\text{SO}_3-2\text{M}^+$ ($n = 2-10$ integer; $\text{M}^+ =$ monovalent onium cation). Preferably, M^+ comprises sulfonium cations $\text{R}_1\text{R}_2\text{R}_3\text{S}^+$ or iodonium cations $\text{R}_4\text{R}_5\text{I}^+$ ($\text{R}_1-\text{R}_5 = \text{C}_1-10$ alkyl, C_6-18 aryl; ≥ 1 of R_1-R_3 may be bonded together and form ring with S; R_4 and R_5 may be bonded together and form ring with I). Acid generators comprising N,N'-di(sulfonyloximides) I ($n = 2-10$ integer;

R6, R7 = H, monovalent organic group; R6 and R7 bonding to the same imide ring may be bonded together and form ring; Y1 = single bond, double bond, divalent organic group) are also claimed. The pos. working radiation-sensitive resin compns. contain (A) radiation-sensitive acid generators involving any of the above-mentioned acid generators and (B) resins which are insol. or slightly soluble in alkalis, bear acid-dissociable groups, and become soluble in alkalis upon dissociation of the acid-dissociable groups. The neg.-working radiation-sensitive resin compns. contain (A) radiation-sensitive acid generators involving any of the above-mentioned acid generators, (C) alkali-soluble resins, and (D) compds. capable of crosslinking the alkali-soluble resins in the presence of acids. The acids generated from the acid generators have sufficiently high acidity and b.p., the diffusion length of the acids in resist films is appropriately short, mask pattern dependency is small, and focus depth is excellent.

- IC ICM C07C309-06
ICS C07C381-12; C07D207-46; C07D209-52; C07D221-14; C07D491-18;
G03F007-004; G03F007-038; G03F007-039; H01L021-027
- CC 74-5 (Radiation Chemistry, Photochemistry, and **Photographic** and Other Reprographic Processes)
- ST disulfonic acid generator **deep UV resist**; pos photoresist disulfonic acid generator; neg photoresist disulfonic acid generator
- IT **Negative photoresists**
Positive photoresists
(**deep UV**; disulfonic acid generators for pos. or neg. working **radiation-sensitive resist** compns.)
- IT Sulfonic acids, preparation
RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)
(di-; disulfonic acid generators for pos. or neg. working **radiation-sensitive resist** compns.)
- IT Onium compounds
RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)
(disulfonic acid; disulfonic acid generators for pos. or neg. working **radiation-sensitive resist** compns.)
- IT **Resists**
(neg.-working **radiation-sensitive**; disulfonic acid generators for pos. or neg. working **radiation-sensitive resist** compns.)
- IT **Resists**
(pos.-working **radiation-sensitive**; disulfonic acid generators for pos. or neg. working **radiation-sensitive resist** compns.)
- IT 17464-88-9
RL: TEM (Technical or engineered material use); USES (Uses)
(crosslinking agent; disulfonic acid generators for pos. or neg. working **radiation-sensitive resist** compns.)
- IT 102-71-6, Triethanolamine, uses 716-79-0, 2-Phenylbenzimidazole 1116-76-3, Tri-n-octylamine 1739-84-0, 1,2-Dimethylimidazole 193810-83-2, N-tert-Butoxycarbonyl-2-phenylbenzimidazole
RL: **MOA (Modifier or additive use)**; TEM (Technical or engineered material use); USES (Uses)
(diffusion controlling agent; disulfonic acid generators for pos. or neg. working **radiation-sensitive resist** compns.)
- IT 133710-62-0 138529-81-4, Bis(cyclohexylsulfonyl)diazomethane 144317-44-2, Triphenylsulfonium nonafluoro-n-butanesulfonate 209482-18-8
RL: CAT (Catalyst use); USES (Uses)
(disulfonic acid generators for pos. or neg. working **radiation-sensitive resist** compns.)

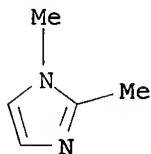
IT 809274-47-3P 809274-48-4P 809274-49-5P 809274-50-8P
 RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation);
 USES (Uses)
 (disulfonic acid generators for pos. or neg. working radiation
 -sensitive resist compns.)

IT 109-92-2DP, Ethyl vinyl ether, reaction products with 4-tert-butoxystyrene-
 4-hydroxystyrene copolymer 95418-60-3DP, 4-tert-Butoxystyrene
 homopolymer, partially hydrolyzed 123589-22-0DP, 4-tert-Butoxystyrene-4-
 hydroxystyrene copolymer, reaction products with Et vinyl ether
 123589-22-0P, 4-tert-Butoxystyrene-4-hydroxystyrene copolymer
 200808-68-0P, tert-Butyl acrylate-4-hydroxystyrene-styrene copolymer
 221549-67-3DP, 4-Acetoxystyrene-tert-butyl acrylate-styrene copolymer,
 hydrolyzed 288622-96-8P, 4-tert-Butoxystyrene-4-hydroxystyrene-styrene
 copolymer 340964-24-1P 340964-38-7P 406198-64-9DP,
 4-Acetoxystyrene-4-tert-butoxystyrene-styrene copolymer, hydrolyzed
 428516-13-6P 479628-09-6P 670248-60-9P 690258-42-5P 726175-42-4P
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material
 use); PREP (Preparation); USES (Uses)
 (disulfonic acid generators for pos. or neg. working radiation
 -sensitive resist compns.)

IT 24979-74-6, 4-Hydroxystyrene-styrene copolymer
 RL: TEM (Technical or engineered material use); USES (Uses)
 (disulfonic acid generators for pos. or neg. working radiation
 -sensitive resist compns.)

IT 1739-84-0, 1,2-Dimethylimidazole
 RL: MOA (Modifier or additive use); TEM (Technical or engineered
 material use); USES (Uses)
 (diffusion controlling agent; disulfonic acid generators for pos. or
 neg. working radiation-sensitive resist compns.)

RN 1739-84-0 HCAPLUS
 CN 1H-Imidazole, 1,2-dimethyl- (9CI) (CA INDEX NAME)



L45 ANSWER 5 OF 44 HCAPLUS COPYRIGHT 2005 ACS on STN
 AN 2004:1019601 HCAPLUS
 DN 142:13680
 TI Basic compound, resist composition and patterning process
 IN Watanabe, Takeru; Kinsho, Takeshi; Hasegawa, Koji
 PA Japan
 SO U.S. Pat. Appl. Publ., 38 pp.
 CODEN: USXXCO
 DT Patent
 LA English
 FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|------------------|------|---------------------|-----------------|----------|
| PI | US 2004234884 | A1 | 20041125 | US 2004-849186 | 20040520 |
| | JP 2004347736 | A2 | 20041209 | JP 2003-142813 | 20030521 |
| PRAI | JP 2003-142813 | A | 20030521 | | |
| OS | MARPAT 142:13680 | | | | |

AB Resist compns. comprising basic compds. having an imidazole skeleton and a

Shin-etsu.

polar functional group have an excellent resolution and an excellent focus margin and are useful in microfabrication using electron beams or deep-UV light.

IC ICM G03C001-76

INCL 430141000; 430270100

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST basic compd resist compn patterning UV electron beam lithog

IT 1615-14-1P, 1H-Imidazole-1-ethanol 34793-28-7P

51755-51-2P 72338-57-9P 72338-63-7P,

1H-Imidazole-1-butanenitrile 72459-38-2P 195304-84-8P

798571-49-0P 798571-50-3P 798571-51-4P

RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(basic compound; resist composition and patterning process)

IT 138529-81-4 142342-33-4 144317-44-2 161453-44-7 266308-64-9

RL: TEM (Technical or engineered material use); USES (Uses)
(photoacid generator; resist composition and patterning process)

IT 351181-99-2P

RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(resist composition and patterning process)

IT 1615-14-1P, 1H-Imidazole-1-ethanol 34793-28-7P

51755-51-2P 72338-57-9P 72338-63-7P,

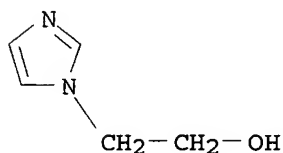
1H-Imidazole-1-butanenitrile 72459-38-2P 195304-84-8P

798571-49-0P 798571-50-3P 798571-51-4P

RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(basic compound; resist composition and patterning process)

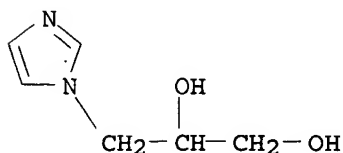
RN 1615-14-1 HCAPLUS

CN 1H-Imidazole-1-ethanol (9CI) (CA INDEX NAME)



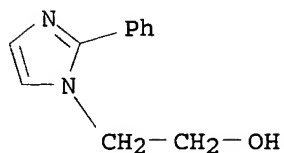
RN 34793-28-7 HCAPLUS

CN 1,2-Propanediol, 3-(1H-imidazol-1-yl)- (9CI) (CA INDEX NAME)

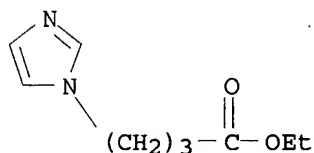


RN 51755-51-2 HCAPLUS

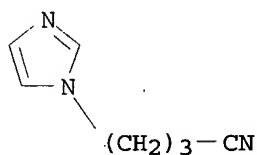
CN 1H-Imidazole-1-ethanol, 2-phenyl- (9CI) (CA INDEX NAME)



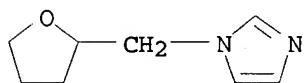
RN 72338-57-9 HCAPLUS
 CN 1H-Imidazole-1-butanoic acid, ethyl ester (9CI) (CA INDEX NAME)



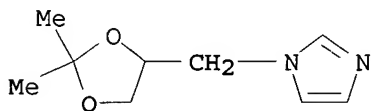
RN 72338-63-7 HCAPLUS
 CN 1H-Imidazole-1-butanenitrile (9CI) (CA INDEX NAME)



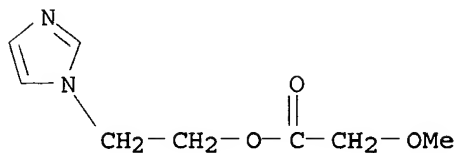
RN 72459-38-2 HCAPLUS
 CN 1H-Imidazole, 1-[(tetrahydro-2-furanyl)methyl]- (9CI) (CA INDEX NAME)



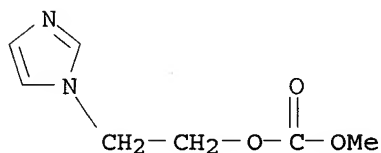
RN 195304-84-8 HCAPLUS
 CN 1H-Imidazole, 1-[(2,2-dimethyl-1,3-dioxolan-4-yl)methyl]- (9CI) (CA INDEX NAME)



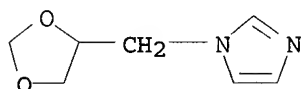
RN 798571-49-0 HCAPLUS
 CN Acetic acid, methoxy-, 2-(1H-imidazol-1-yl)ethyl ester (9CI) (CA INDEX NAME)



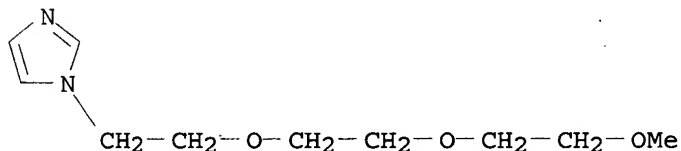
RN 798571-50-3 HCAPLUS
 CN Carbonic acid, 2-(1H-imidazol-1-yl)ethyl methyl ester (9CI) (CA INDEX NAME)



RN 798571-51-4 HCAPLUS
 CN 1H-Imidazole, 1-(1,3-dioxolan-4-ylmethyl)- (9CI) (CA INDEX NAME)



IT 351181-99-2P
 RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (resist composition and patterning process)
 RN 351181-99-2 HCAPLUS
 CN 1H-Imidazole, 1-[2-[2-(2-methoxyethoxy)ethoxy]ethyl]- (9CI) (CA INDEX NAME)



L45 ANSWER 6 OF 44 HCAPLUS COPYRIGHT 2005 ACS on STN
 AN 2004:842676 HCAPLUS
 DN 141:358194
 TI Pigment dispersion for color resist, photosensitive color composition, and color filter
 IN Nakamura, Kazuhiko; Otsuka, Yoshimasa
 PA Dainippon Printing Co., Ltd., Japan; The Inctec Inc.
 SO Jpn. Kokai Tokkyo Koho, 66 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|----------|-----------------|----------|
| PI | JP 2004287365 | A2 | 20041014 | JP 2003-124543 | 20030324 |
| PRAI | JP 2003-124543 | | 20030324 | | |

AB Disclosed is the pigment dispersion comprising a pigment, an organic solvent, a copolymer having a unit having an acid group, a unit having a photohardenable functional group, and a unit which is free of an acid functional group and has a SP value ≥ 10 , and a pigment dispersing agent which is made from a polymer having the backbone structure containing diisocyanate and/or triisocyanate, a polyester chain, and a polymer free of an acid group and a polyether chain.

IC ICM G03F007-038
ICS C08F290-12; C09B067-20; C09B067-46; C09D017-00; G02B005-20; G03F007-004

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35, 38

ST pigment dispersion color resist photosensitive compn filter

IT Dispersing agents
Optical filters
Photoimaging materials
Photoresists
Resists

(pigment dispersion for color resist, photosensitive color composition, and color filter)

IT Polyesters, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(pigment dispersion for color resist, photosensitive color composition, and color filter)

IT 775341-96-3P 775341-97-4P 775341-98-5P 775341-99-6P
775342-00-2P 775342-01-3P 775342-02-4P
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(pigment dispersion for color resist, photosensitive color composition, and color filter)

IT 775341-97-4P
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(pigment dispersion for color resist, photosensitive color composition, and color filter)

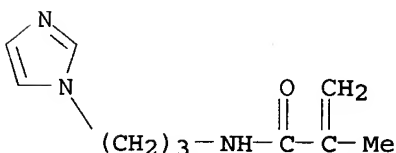
RN 775341-97-4 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, oxiranylmethyl ester, polymer with N-[3-(1H-imidazol-1-yl)propyl]-2-methyl-2-propenamide, phenylmethyl 2-methyl-2-propenoate and 2-propenoic acid (9CI) (CA INDEX NAME)

CM 1

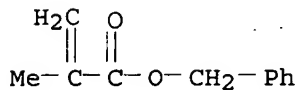
CRN 167552-67-2

CMF C10 H15 N3 O



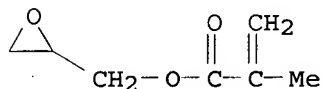
CM 2

CRN 2495-37-6
CMF C11 H12 O2



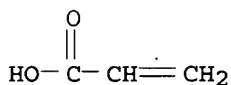
CM 3

CRN 106-91-2
CMF C7 H10 O3



CM 4

CRN 79-10-7
CMF C3 H4 O2



L45 ANSWER 7 OF 44 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 2004:837666 HCAPLUS

DN 141:340378

TI Pigment dispersions for colored **resists**, **photosensitive** colored compositions, and color filters from them with excellent surface smoothness, electric reliability, and color reproducibility

IN Nakamura, Kazuhiko; Otsuka, Yoshinasa

PA Dainippon Printing Co., Ltd., Japan; The Inctec Inc.

SO Jpn. Kokai Tokkyo Koho, 70 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|----------|-----------------|----------|
| PI | JP 2004287366 | A2 | 20041014 | JP 2003-124544 | 20030324 |
| PRAI | JP 2003-124544 | | 20030324 | | |

AB The dispersions or compns. contain pigments (A), dispersants (B) of polymers consisting of units $\text{CH}_2\text{C}(\text{XN}+\text{RaRbRc})\text{Rd.Y-}$ [Ra-c = H, (un)substituted cyclic or linear hydrocarbyl; ≥ 2 of Ra-c may form ring; Rd = H, Me; X = divalent linking group; Y- = counter anion] and units $\text{CH}_2\text{CRe}(\text{C:OORf})$ [Re = H, Me; Rf = (un)substituted cyclic or linear

alkyl, aryl, aralkyl] and bearing no ether chains or no acidic functional groups, copolymers (C) consisting of units bearing acidic functional groups, units bearing photocurable groups, and acidic group-free units with SP value ≥ 10 , and organic solvents (D).

IC ICM G03F007-004

ICS C08F290-12; C09B067-20; C09B067-46; G02B005-20; G02B005-22;
G03F007-038

CC 74-4 (Radiation Chemistry, Photochemistry, and **Photographic** and Other Reprographic Processes)

Section cross-reference(s): 38

IT 773145-21-4P **773145-23-6P** 773145-28-1P 773145-31-6P

773145-33-8P 773145-35-0P

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)

(dispersing aid; pigment compns. containing certain copolymer dispersants and certain copolymer dispersing aids for color filters with good surface smoothness and elec. reliability)

IT 86927-55-1P **167552-67-2P**

RL: IMF (Industrial manufacture); RCT (Reactant); **PREP (Preparation)**; RACT (Reactant or reagent)

(monomer, for dispersing aid preparation; pigment compns. containing certain copolymer dispersants and certain copolymer dispersing aids for color filters with good surface smoothness and elec. reliability)

IT **773145-23-6P**

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)

(dispersing aid; pigment compns. containing certain copolymer dispersants and certain copolymer dispersing aids for color filters with good surface smoothness and elec. reliability)

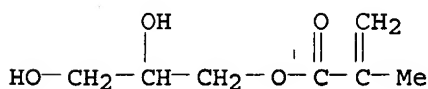
RN 773145-23-6 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, phenylmethyl ester, polymer with N-[3-(1H-imidazol-1-yl)propyl]-2-methyl-2-propenamide and 2-propenoic acid, 2-hydroxy-3-[(2-methyl-1-oxo-2-propenyl)oxy]propyl ester (9CI) (CA INDEX NAME)

CM 1

CRN 5919-74-4

CMF C7 H12 O4



CM 2

CRN 773145-22-5

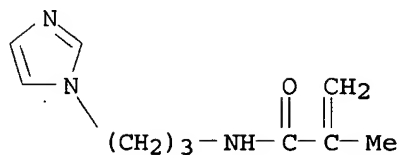
CMF (C11 H12 O2 . C10 H15 N3 O . C3 H4 O2)x

CCI PMS

CM 3

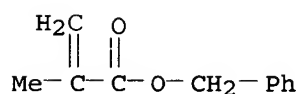
CRN 167552-67-2

CMF C10 H15 N3 O



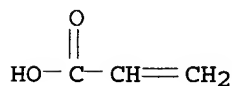
CM 4

CRN 2495-37-6
CMF C11 H12 O2



CM 5

CRN 79-10-7
CMF C3 H4 O2



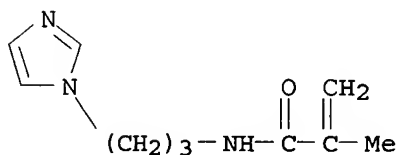
IT 167552-67-2P

RL: IMF (Industrial manufacture); RCT (Reactant); **PREP**
(Preparation); RACT (Reactant or reagent)

(monomer, for dispersing aid preparation; pigment compns. containing certain copolymer dispersants and certain copolymer dispersing aids for color filters with good surface smoothness and elec. reliability)

RN 167552-67-2 HCAPLUS

CN 2-Propenamide, N-[3-(1H-imidazol-1-yl)propyl]-2-methyl- (9CI) (CA INDEX NAME)



L45 ANSWER 8 OF 44 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 2004:550151 HCAPLUS

DN 141:114065

TI Imidazole derivative acid diffusion controlling agent and radiation sensitive resin composition using the same

IN Nagai, Tomoki; Yokoyama, Kenichi; Miyaji, Masaaki

PA JSR Ltd., Japan

KATHLEEN FULLER EIC 1700 REMSON 4B28 571/272-2505

SO Jpn. Kokai Tokkyo Koho, 41 pp.

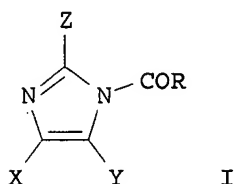
CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|-------------------|------|---------------------|-----------------|----------|
| PI | JP 2004191764 | A2 | 20040708 | JP 2002-361047 | 20021212 |
| PRAI | JP 2002-361047 | | 20021212 | | |
| OS | MARPAT 141:114065 | | | | |
| GI | | | | | |



AB Disclosed is the imidazole derivative acid diffusion controlling agent represented I (X, Y, Z = H, monovalent organic group; and R = hydrocarbon group). The radiation sensitive resin composition comprises the imidazole derivative acid diffusion controlling agent, a radiation sensitive acid generator, an alkali soluble resin, and a crosslinker. The radiation sensitive resin composition is used for a **resist** such as a **UV photoresist**, an x-ray **resist**, and an electron beam resist. The use of the imidazole derivative acid diffusion controlling provided excellent resolution and storage stability.

IC ICM G03F007-004

ICS G03F007-038; G03F007-039; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and **Photographic** and Other Reprographic Processes)

Section cross-reference(s): 28

ST imidazole deriv acid diffused controlling agent radiation sensitive resin; **resist photoresist x ray resist electron beam**

IT 4122-53-6P

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); **PREP (Preparation)**; **USES (Uses)**

(imidazole derivative acid diffusion controlling agent for radiation sensitive resin composition)

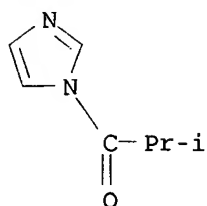
IT 4122-53-6P

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); **PREP (Preparation)**; **USES (Uses)**

(imidazole derivative acid diffusion controlling agent for radiation sensitive resin composition)

RN 4122-53-6 HCAPLUS

CN 1H-Imidazole, 1-(2-methyl-1-oxopropyl)- (9CI) (CA INDEX NAME)



L45 ANSWER 9 OF 44 HCAPLUS COPYRIGHT 2005 ACS on STN
 AN 2004:534427 HCAPLUS
 DN 141:96795
 TI Color filter black matrix resist composition and carbon black dispersion
 composition used for the composition
 IN Kamata, Hirotooshi; Kamijo, Masanao; Onishi, Mina
 PA Showa Denko K. K., Japan
 SO PCT Int. Appl., 69 pp.
 CODEN: PIXXD2
 DT Patent
 LA English
 FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|------|---------------------|-----------------|----------|
| PI WO 2004055597 | A1 | 20040701 | WO 2003-JP16174 | 20031217 |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | | |
| JP 2004198717 | A2 | 20040715 | JP 2002-366878 | 20021218 |
| PRAI JP 2002-366878 | A | 20021218 | | |
| US 2002-435997P | P | 20021226 | | |

AB The present invention provides a carbon black dispersion composition for a color filter black matrix resist composition, containing (A) a carbon black having specified phys. properties (average primary particle diameter, concentration of surface carboxyl groups), (B) a copolymer having an amino group and/or its quaternary ammonium salt, and (C) an organic solvent, and a color filter black matrix resist composition that contains the above-mentioned dispersion composition, (D) a binder resin having a carboxyl group, (E) an ethylenically unsatd. monomer, (F) a photopolymer. initiator, and (G) specified multifunctional thiol compound and can easily form a thin film or pattern having high light-shielding property by photolithog. method pattern, has excellent storage stability, and exhibits sufficient sensitivity and resolution

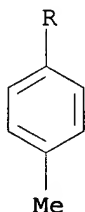
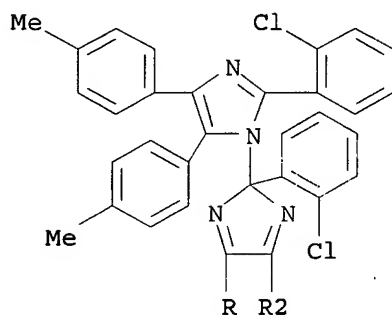
IC ICM G03F007-00
 ICS G03F001-1335

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 35, 38

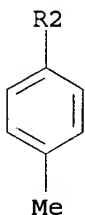
IT Optical filters
 Photolithography

(color filter black matrix **resist** composition and carbon black dispersion composition)
 IT 590678-22-1P **645402-18-2P**
 RL: CAT (Catalyst use); SPN (Synthetic preparation); **PREP**
 (**Preparation**); USES (Uses)
 (photopolymn. initiator; color filter black matrix
 resist composition and carbon black dispersion composition containing)
 IT **645402-18-2P**
 RL: CAT (Catalyst use); SPN (Synthetic preparation); **PREP**
 (**Preparation**); USES (Uses)
 (photopolymn. initiator; color filter black matrix
 resist composition and carbon black dispersion composition containing)
 RN 645402-18-2 HCAPLUS
 CN 1H-Imidazole, 2-(2-chlorophenyl)-1-[2-(2-chlorophenyl)-4,5-bis(4-methylphenyl)-2H-imidazol-2-yl]-4,5-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



RE.CNT 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L45 ANSWER 10 OF 44 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 2004:534426 HCAPLUS

DN 141:96711

TI Color filter black matrix resist composition

IN Kamata, Hirotooshi; Kamiyo, Masanao; Onishi, Mina

PA Showa Denko K. K., Japan

SO PCT Int. Appl., 64 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|-----------------|--|----------|-----------------|----------|
| PI | WO 2004055596 | A1 | 20040701 | WO 2003-JP16017 | 20031215 |
| | W: | AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MY, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW | | | |
| | RW: | BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | |
| | JP 2004198542 | A2 | 20040715 | JP 2002-364274 | 20021216 |
| PRAI | JP 2002-364274 | A | 20021216 | | |
| | US 2002-435284P | P | 20021223 | | |

OS MARPAT 141:96711

AB The present invention relates to (1) a photosensitive composition for color filter black matrix resists, containing (A) a binder resin having a carboxyl group, (B) a compound having an ethylenically unsatd. bond, (C) a photopolymerization initiator, (D) a thiol compound having two or more mercapto-group-containing groups in which carbon atoms at the a-position and/or n-position with respect to the mercapto group have a substituent, and (E) an organic solvent, and having high sensitivity and excellent storage stability; and (2) color filter black matrix resist containing (1) the photosensitive composition for color filter black matrix resists and a black pigment (F).

IC ICM G03F007-00

ICS G02F001-1335

CC 74-6 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 35, 38

IT Polymerization

(photopolymer.; color filter black matrix resist composition)

IT 590678-00-5P 590678-06-1P 590678-22-1P 645402-18-2P

RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(photopolymerization initiator; color filter black matrix resist composition containing)

IT 645402-18-2P

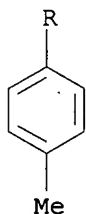
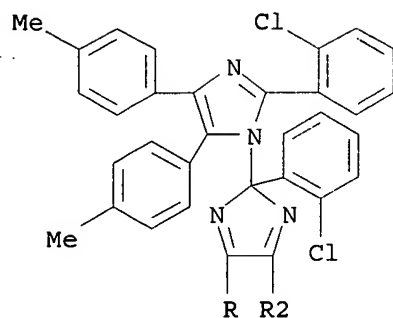
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(photopolymerization initiator; color filter black matrix resist composition containing)

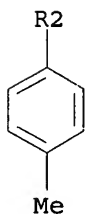
RN 645402-18-2 HCAPLUS

CN 1H-Imidazole, 2-(2-chlorophenyl)-1-[2-(2-chlorophenyl)-4,5-bis(4-methylphenyl)-2H-imidazol-2-yl]-4,5-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L45 ANSWER 11 OF 44 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2004:354917 HCAPLUS
DN 140:357868
TI Hexaarylbiimidazole compounds and photopolymerization initiator
compositions containing the same
IN Kamata, Hirotoshi; Mizo, Tatsuhiro; Onishi, Mina
PA Showa Denko K. K., Japan
SO PCT Int. Appl., 54 pp.
CODEN: PIXXD2

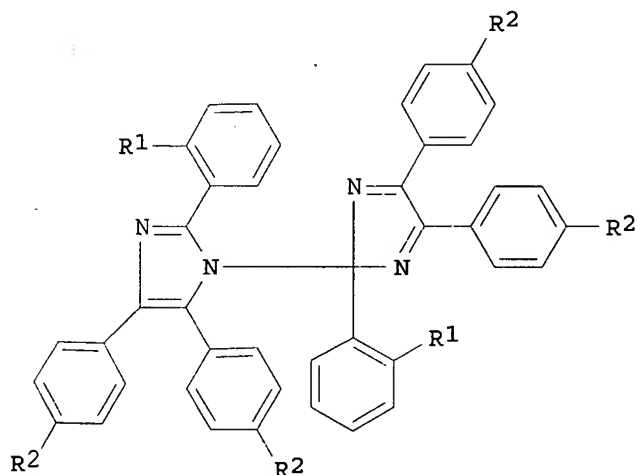
DT Patent
LA English

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|----|--|------|----------|-----------------|----------|
| PI | WO 2004035546 | A1 | 20040429 | WO 2003-JP12618 | 20031001 |
| | W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, | | | | |

CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE,
 GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KR, KZ, LC, LK, LR, LS,
 LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG,
 PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR,
 TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY,
 KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES,
 FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR,
 BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

JP 2004137152 A2 20040513 JP 2002-300446 20021015
 PRAI JP 2002-300446 A 20021015
 US 2002-419093P P 20021018
 OS MARPAT 140:357868
 GI



I

AB The present invention provides a novel hexaarylbiimidazole compound of I type (R1 = halogen; R2 = optionally substituted C1-4 alkyl group). The hexaarylbiimidazole compound of the present invention is useful as photoradical generators in **photopolymerizable** compns. used as **resists** and is characterized by low sublimating thermal decomposition products. The photopolymerizable compns. may be suitably used as resists or as color filters for color liquid crystal display elements, cameras and the like (no data).

IC ICM C07D233-54

ICS G03F007-00

CC 35-3 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 38, 74

ST **photoresist photoinitiator** hexaarylbiimidazole compd
 color filter LCD device

IT **Photoresists**

(manufacture of hexaarylbiimidazole compds. and **photopolymn.**
 initiator compns. containing the same)

IT 645402-18-2P 645402-19-3P

RL: CAT (Catalyst use); IMF (Industrial manufacture); **PREP**

(**Preparation**); **USES** (Uses)

(manufacture of hexaarylbiimidazole compds. and photopolymn. initiator
 compns. containing the same)

IT 645402-18-2P

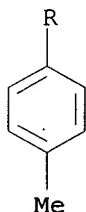
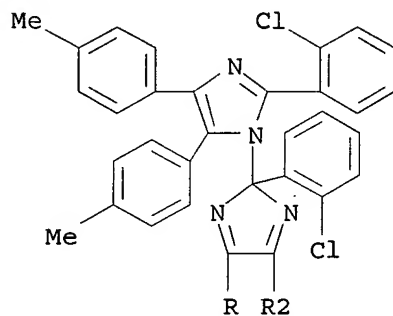
RL: CAT (Catalyst use); IMF (Industrial manufacture); **PREP**
(Preparation); USES (Uses)

(manufacture of hexaarylbiimidazole compds. and photopolymn. initiator
compns. containing the same)

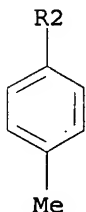
RN 645402-18-2 HCAPLUS

CN 1H-Imidazole, 2-(2-chlorophenyl)-1-[2-(2-chlorophenyl)-4,5-bis(4-
methylphenyl)-2H-imidazol-2-yl]-4,5-bis(4-methylphenyl)- (9CI) (CA INDEX
NAME)

PAGE 1-A



PAGE 2-A



RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L45 ANSWER 12 OF 44 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 2004:351947 HCAPLUS

DN 140:383097

TI Positively-working **radiation resist** resin composition
containing substituted imidazole

IN Yokoyama, Kenichi; Miyajima, Fumihisa; Nagai, Tomoki; Yoneda, Eiji

PA JSR Ltd., Japan

applicants

SO Jpn. Kokai Tokkyo Koho, 40 pp.

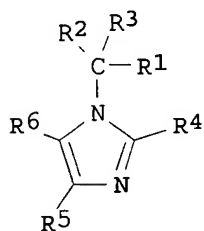
CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|-------------------|------|----------|-----------------|----------|
| PI | JP 2004133055 | A2 | 20040430 | JP 2002-295260 | 20021008 |
| | US 2005095527 | A1 | 20050505 | US 2003-679367 | 20031007 |
| PRAI | JP 2002-295260 | A | 20021008 | | |
| OS | MARPAT 140:383097 | | | | |
| GI | | | | | |



AB The composition contains (A) N-substituted imidazole I [R1-R6 = H, cyano, (substituted) C1-20 alkyl, (substituted) C3-20 alicyclic group, C2-20 alkenyl, (substituted) aryl, (substituted) heteroaryl; 2 of R1-R6 may form heterocyclic group or form dimer], (B) a radiation-sensitive acid-generating agent, and (C) (c1) a resin insol. or difficult to be soluble in alkali protected by an acid-sensitive dissociable group, which is converted to alkali soluble in removal of the dissociable group or (c2) an alkali-soluble resin and an alkali dissoln. regulator.

The storage-stable composition shows high resolution

ICM G03F007-004

ICS G03F007-039; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 38

ST pos working radiation resist substituted imidazole;

storage stability radiation resist

IT Polysiloxanes, uses

RL: TEM (Technical or engineered material use); USES (Uses)

(pos.-working radiation resist resin composition containing substituted imidazole with storage stability)

IT Resists

(radiation-sensitive; pos.-working radiation resist resin composition containing substituted imidazole with storage stability)

IT 66003-78-9, Triphenylsulfonium trifluoromethanesulfonate 84563-54-2,

Bis[4-(tert-butyl)phenyl]iodonium trifluoromethanesulfonate 138529-81-4,

Bis(cyclohexylsulfonyl)diazomethane 181425-38-7 209482-18-8

RL: CAT (Catalyst use); USES (Uses)

(acid-generating agent; pos.-working radiation resist

resin composition containing substituted imidazole with storage stability)

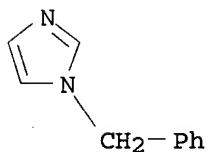
IT 4238-71-5, 1-Benzylimidazole 13750-62-4,

1-Benzyl-2-methylimidazole

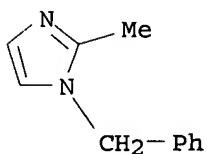
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)

(pos.-working radiation resist resin composition containing

substituted imidazole prepared from)
 IT 693-98-1, 2-Methylimidazole 4704-77-2
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (pos.-working radiation resist resin composition containing
 substituted imidazole prepared from)
 IT 683786-05-2P 683786-06-3P
 RL: IMF (Industrial manufacture); MOA (Modifier or additive use)
 ; TEM (Technical or engineered material use); PREP (Preparation)
 ; USES (Uses)
 (pos.-working radiation resist resin composition containing
 substituted imidazole with storage stability)
 IT 109-92-2DP, Ethyl vinyl ether, reaction product with polyhydroxystyrene
 24424-99-5DP, Di(tert-butyl) dicarbonate, reaction product with
 polyhydroxystyrene 24979-70-2DP, Poly(p-hydroxystyrene), reaction
 product with di-Bu dicarbonate 123589-22-0DP, p-(tert-Butoxy)styrene-p-
 hydroxystyrene copolymer, reaction product with Et vinyl ether
 129674-22-2DP, p-(tert-Butoxy)carbonyloxystyrene-p-hydroxystyrene
 copolymer, reaction product with Et vinyl ether 221549-67-3P
 288622-95-7P 330576-44-8P 340964-24-1P 406198-64-9P 479628-09-6P
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material
 use); PREP (Preparation); USES (Uses)
 (pos.-working radiation resist resin composition containing
 substituted imidazole with storage stability)
 IT 4238-71-5, 1-Benzylimidazole 13750-62-4,
 1-Benzyl-2-methylimidazole
 RL: MOA (Modifier or additive use); TEM (Technical or engineered
 material use); USES (Uses)
 (pos.-working radiation resist resin composition containing
 substituted imidazole prepared from)
 RN 4238-71-5 HCAPLUS
 CN 1H-Imidazole, 1-(phenylmethyl)- (9CI) (CA INDEX NAME)



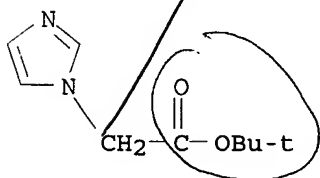
RN 13750-62-4 HCAPLUS
 CN 1H-Imidazole, 2-methyl-1-(phenylmethyl)- (9CI) (CA INDEX NAME)



IT 683786-05-2P 683786-06-3P
 RL: IMF (Industrial manufacture); MOA (Modifier or additive use)
 ; TEM (Technical or engineered material use); PREP (Preparation)
 ; USES (Uses)
 (pos.-working radiation resist resin composition containing
 substituted imidazole with storage stability)
 RN 683786-05-2 HCAPLUS

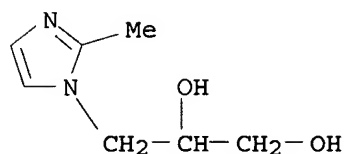
acid-sensitive alkali solubilizable resin or an alkali solubilizable resin/an alkali-solubility-controlling agent for the resin, wherein sulfur compound (R1)(R2)N-S(O)2-R3(R1-3 = H, C1-20 hydrocarbon). The composition provides the high resolution, high resistance towards various environmental conditions, and good storageability.

IC ICM G03F007-004
ICS G03F007-038; G03F007-039; H01L021-027
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35
ST radiation resist resin compn nitrogen
IT Resists
(radiation-sensitive, chemical amplified; radiation-sensitive chemical amplified resist resin composition)
IT 79-08-3, Bromoacetic acid 101-83-7, Dicyclohexylamine 288-32-4, Imidazole, reactions 716-79-0, 2-Phenylbenzimidazole 865-47-4, 95418-60-3D, p-tert-Butoxystyrene homopolymer, hydrolyzed 221549-67-3, p-Acetoxystyrene-styrene-tert-butyl acrylate copolymer
RL: RCT (Reactant); RACT (Reactant or reagent)
(radiation-sensitive chemical amplified resist resin composition)
IT 122-39-4P, Diphenylamine, preparation 83468-75-1P
123589-22-0DP, p-Hydroxystyrene-p-tert-butoxystyrene copolymer, ethoxyethyl ester 330576-44-8P 406198-64-9P, p-Acetoxystyrene-styrene-p-tert-butoxystyrene copolymer 495384-04-8P 495384-06-0P
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(radiation-sensitive chemical amplified resist resin composition)
IT 83468-75-1P
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(radiation-sensitive chemical amplified resist resin composition)
RN 83468-75-1 HCAPLUS
CN 1H-Imidazole-1-acetic acid, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



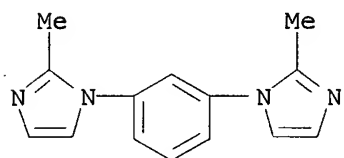
L45 ANSWER 15 OF 44 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2003:111378 HCAPLUS
DN 138:161077
TI Radiation-sensitive chemically amplified resist resin composition containing specific nitrogen-containing compound as acid-diffusion-control agent
IN Nagai, Tomoki; Kobayashi, Eiichi; Shimokawa, Tsutomu
PA JSR Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 25 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

CN 1,2-Propanediol, 3-(2-methyl-1H-imidazol-1-yl)- (9CI) (CA INDEX NAME)



RN 683786-06-3 HCAPLUS

CN 1H-Imidazole, 1,1'-(1,3-phenylene)bis[2-methyl- (9CI) (CA INDEX NAME)



L45 ANSWER 13 OF 44 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 2004:37347 HCAPLUS

DN 140:102033

TI Photopolymerization initiator and photopolymerizable composition containing it

IN Kamata, Hirotoishi; Onishi, Mina; Murofushi, Katsumi

PA Showa Denko K. K., Japan

SO Jpn. Kokai Tokkyo Koho, 35 pp.

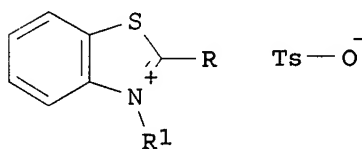
CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|-------------------|------|---------------------|-----------------|----------|
| PI | JP 2004012820 | A2 | 20040115 | JP 2002-166419 | 20020607 |
| PRAI | JP 2002-166419 | | 20020607 | | |
| OS | MARPAT 140:102033 | | | | |
| GI | | | | | |



AB The photopolymn. initiator contains a photoradical generator and 1,3-dicarbonyl compound $R_1COCR_3HCOR_2$ [R_1-2 = alkyl, alkoxy, amino, aralkyl, aryl, aryloxy, organic group bearing unsatd. group or polymer residue; R_3 = H, alkyl, aralkyl, aryl, (these groups may be substituted)] or I [R_3 = H, alkyl, aralkyl, aryl; R_4 = alkylene; (these groups may be substituted)]. The photopolymn. composition contains (A) the photopolymn. initiator, (B) a binder resin bearing carbonyl group and (C) a compound with ethylenic unsatd. group. The resist pattern formation by irradiating the composition

through line-patterned photomask and alkali development is characterized by that (1) alkali developing time is 1.5-3 times of tD (tD = time for completely dissolving the non-exposed area) or (2) exposure amount is 1-3 times of the min. reasonable exposing amount. Formed resist pattern is also claimed. The composition shows high sensitivity, alkaline-resistance of the exposed area, and gives accurate line patterns useful for color filter.

IC ICM G03F007-031
ICS C08F002-44; C08F002-50; C08F265-02; G02B005-20; G03F007-004; G03F007-029

CC 74-5 (Radiation Chemistry, Photochemistry, and **Photographic** and Other Reprographic Processes)
Section cross-reference(s): 38

ST photopolymer initiator carbonyl compound photoradical generator;
photoresist photopolymer initiator color filter

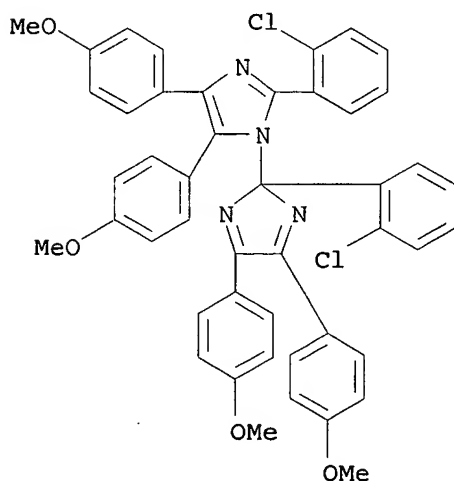
IT Optical filters
Photoresists
(**photopolymer**. compound containing dicarbonyl compound polymerization initiator)

IT 29969-84-4P 645402-18-2P
RL: CAT (Catalyst use); IMF (Industrial manufacture); **PREP**
(**Preparation**); USES (Uses)
(radical generator; photopolymer. compound containing dicarbonyl compound polymerization initiator)

IT 29969-84-4P 645402-18-2P
RL: CAT (Catalyst use); IMF (Industrial manufacture); **PREP**
(**Preparation**); USES (Uses)
(radical generator; photopolymer. compound containing dicarbonyl compound polymerization initiator)

RN 29969-84-4 HCAPLUS

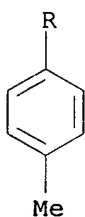
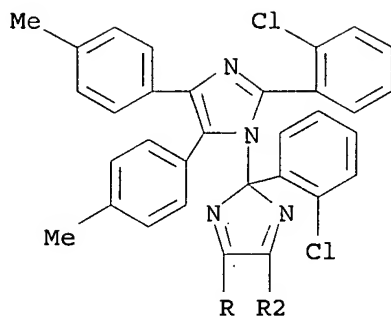
CN 1H-Imidazole, 2-(2-chlorophenyl)-1-[2-(2-chlorophenyl)-4,5-bis(4-methoxyphenyl)-2H-imidazol-2-yl]-4,5-bis(4-methoxyphenyl)- (9CI) (CA INDEX NAME)



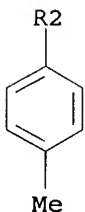
RN 645402-18-2 HCAPLUS

CN 1H-Imidazole, 2-(2-chlorophenyl)-1-[2-(2-chlorophenyl)-4,5-bis(4-methylphenyl)-2H-imidazol-2-yl]-4,5-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



L45 ANSWER 14 OF 44 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 2003:111379 HCAPLUS

DN 138:161078

TI **Radiation-sensitive chemically amplified resist resin**
composition containing specific nitrogen-containing compound as
acid-diffusion-control agent

IN Nagai, Tomoki; Kobayashi, Eiichi; Shimokawa, Tsutomu

PA JSR Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 23 pp.

CODEN: JKXXAF

DT Patent

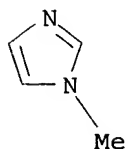
LA Japanese

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|----------|-----------------|----------|
| PI | JP 2003043678 | A2 | 20030213 | JP 2001-234457 | 20010802 |
| PRAI | JP 2001-234457 | | 20010802 | | |

OS MARPAT 138:161078

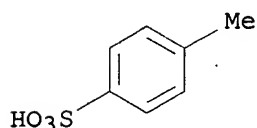
AB The title composition contains a radiation-sensitive acid-generator and an



CM 2

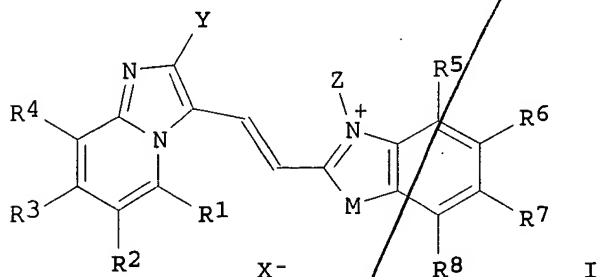
CRN 104-15-4

CMF C7 H8 O3 S



L45 ANSWER 16 OF 44 HCAPLUS COPYRIGHT 2005 ACS on STN
 AN 2002:384437 HCAPLUS
 DN 136:409011
 TI Azaindolizine photosensitizer, visible light-curable photoimaging
 composition, and laser imaging application
 IN Ogiso, Akira; Nakagawa, Shinichi; Kiyono, Kazuhiro; Misawa, Tsutayoshi;
 Shimamura, Takehiko
 PA Mitsui Chemicals Inc., Japan
 SO Jpn. Kokai Tokkyo Koho, 30 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|-------------------|------|----------|-----------------|----------|
| PI | JP 2002146334 | A2 | 20020522 | JP 2000-346577 | 20001114 |
| PRAI | JP 2000-346577 | | 20001114 | | |
| OS | MARPAT 136:409011 | | | | |
| GI | | | | | |



AB The invention relates to an azaindolizine photosensitizer represented by
 general formula I (R1-8 = H, alkyl, aralkyl, aryl, alkenyl, alkoxy,
 aralkyloxy, aryloxy, alkenyloxy, alkylthio, aralkylthio, arylthio,

heterocyclyl, heterocyclyloxy, heterocyclylthio, amino; X- = anion; Y = H, alkyl, arylalkyl, aryl, alkenyl; Z = alkyl, arylalkyl, aryl, alkenyl; M = O, S). The visible light-curable photoimaging composition comprises (A) photocurable resins, (B) photoinitiators, (C) azaindolizine photosensitizers, and (D) radical-protecting agents. The photoimaging composition shows improved stability under 500-620 nm normal light conditions.

IC ICM C09K003-00
ICS C07D471-04; C08F002-50; C09B023-00; G03F007-004; G03F007-027; G03F007-028; G03F007-031

CC 74-4 (Radiation Chemistry, Photochemistry, and **Photographic** and Other Reprographic Processes)
Section cross-reference(s): 38

ST azaindolizine photosensitizer visible light curable **photoimaging** compn dry **photoresist**

IT Negative **photoresists**
Photoimaging
(azaindolizine **photosensitizer**, visible light-curable **photoimaging** composition, and laser imaging application)

IT **Photoresists**
(dry-film; azaindolizine **photosensitizer**, visible light-curable photoimaging composition, and laser imaging application)

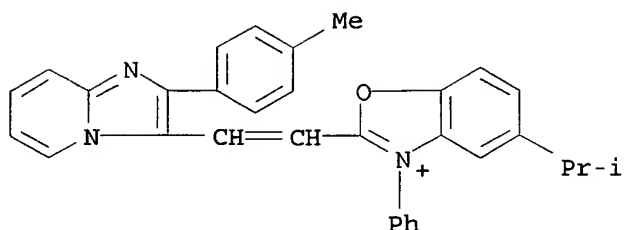
IT 428510-66-1 428510-67-2 428510-68-3
428510-69-4 428510-71-8 428510-72-9
428510-74-1 428510-76-3 428510-78-5
428510-80-9 428510-82-1 428510-85-4
428510-87-6 428510-88-7 428510-89-8
428510-91-2 428510-92-3 428510-94-5
428510-95-6
RL: MOA (Modifier or additive use); USES (Uses)
(azaindolizine photosensitizer in visible light-curable photoimaging composition suitable for laser imaging application)

IT 428510-65-0P
RL: MOA (Modifier or additive use); SPN (Synthetic preparation);
PREP (Preparation); USES (Uses)
(azaindolizine photosensitizer in visible light-curable photoimaging composition suitable for laser imaging application)

IT 428510-66-1 428510-67-2 428510-68-3
428510-69-4 428510-71-8 428510-72-9
428510-74-1 428510-76-3 428510-78-5
428510-80-9 428510-82-1 428510-85-4
428510-87-6 428510-88-7 428510-89-8
428510-92-3 428510-94-5 428510-95-6
RL: MOA (Modifier or additive use); USES (Uses)
(azaindolizine photosensitizer in visible light-curable photoimaging composition suitable for laser imaging application)

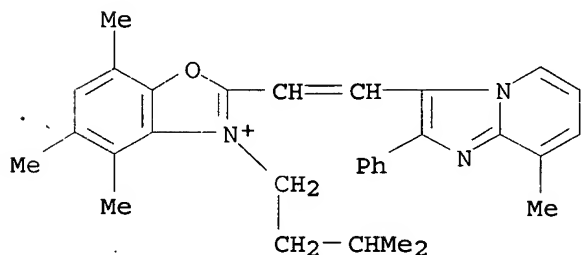
RN 428510-66-1 HCAPLUS

CN Benzoxazolium, 5-(1-methylethyl)-2-[2-[2-(4-methylphenyl)imidazo[1,2-a]pyridin-3-yl]ethenyl]-3-phenyl-, iodide (9CI) (CA INDEX NAME)



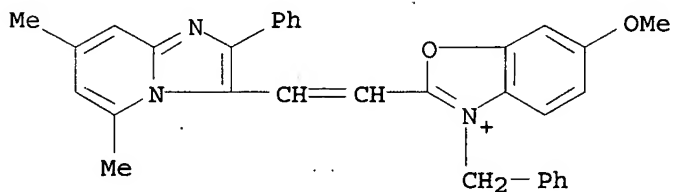
● I⁻

RN 428510-67-2 HCAPLUS
 CN Benzoxazolium, 4,5,7-trimethyl-3-(3-methylbutyl)-2-[2-(8-methyl-2-phenylimidazo[1,2-a]pyridin-3-yl)ethenyl]-, bromide (9CI) (CA INDEX NAME)



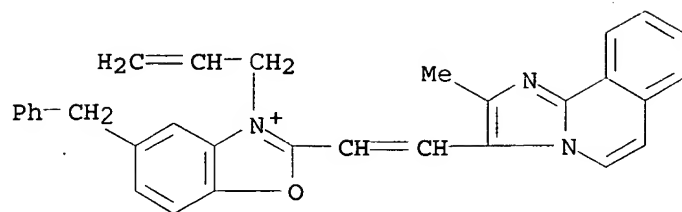
● Br⁻

RN 428510-68-3 HCAPLUS
 CN Benzoxazolium, 2-[2-(5,7-dimethyl-2-phenylimidazo[1,2-a]pyridin-3-yl)ethenyl]-6-methoxy-3-(phenylmethyl)-, bromide (9CI) (CA INDEX NAME)



● Br⁻

RN 428510-69-4 HCAPLUS
 CN Benzoxazolium, 2-[2-(2-methylimidazo[2,1-a]isoquinolin-3-yl)ethenyl]-5-(phenylmethyl)-3-(2-propenyl)-, chloride (9CI) (CA INDEX NAME)

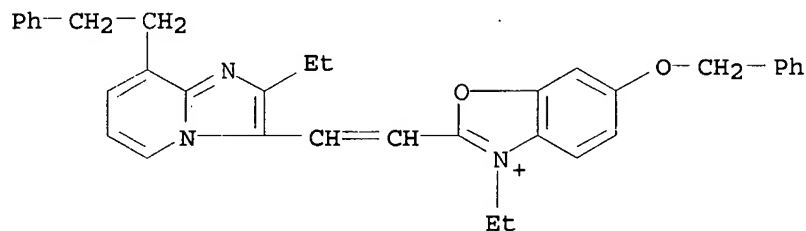


● Cl⁻

RN 428510-71-8 HCAPLUS
 CN Benzoxazolium, 3-ethyl-2-[2-[2-ethyl-8-(2-phenylethyl)imidazo[1,2-a]pyridin-3-yl]ethenyl]-6-(phenylmethoxy)-, salt with 4-methylbenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

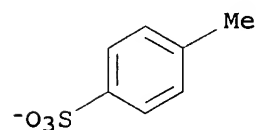
CM 1

CRN 428510-70-7
 CMF C35 H34 N3 O2

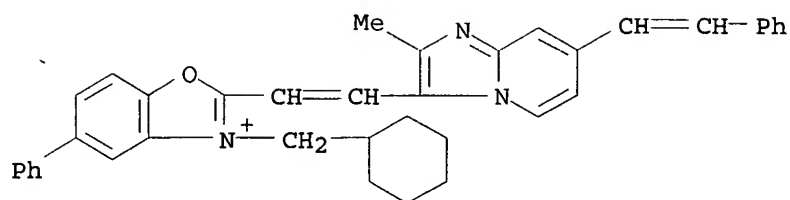


CM 2

CRN 16722-51-3
 CMF C7 H7 O3 S



RN 428510-72-9 HCAPLUS
 CN Benzoxazolium, 3-(cyclohexylmethyl)-2-[2-[2-methyl-7-(2-phenylethenyl)imidazo[1,2-a]pyridin-3-yl]ethenyl]-5-phenyl-, iodide (9CI) (CA INDEX NAME)



● I⁻

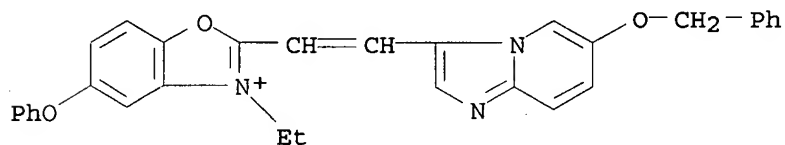
RN 428510-74-1 HCAPLUS

CN Benzoxazolium, 3-ethyl-5-phenoxy-2-[2-[6-(phenylmethoxy)imidazo[1,2-
a]pyridin-3-yl]ethenyl]-, benzenesulfonate (9CI) (CA INDEX NAME)

CM 1

CRN 428510-73-0

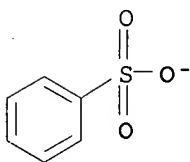
CMF C31 H26 N3 O3



CM 2

CRN 3198-32-1

CMF C6 H5 O3 S



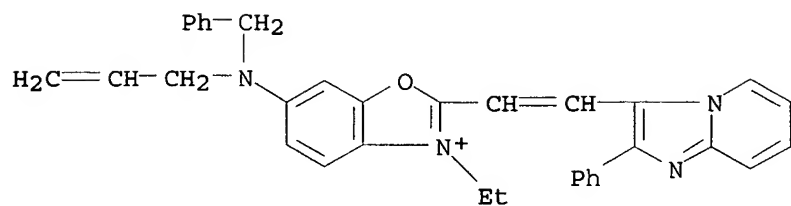
RN 428510-76-3 HCAPLUS

CN Benzoxazolium, 3-ethyl-2-[2-(2-phenylimidazo[1,2-a]pyridin-3-yl)ethenyl]-6-
[(phenylmethyl)-2-propenylamino]-, ethanesulfonate (9CI) (CA INDEX NAME)

CM 1

CRN 428510-75-2

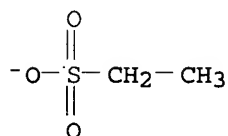
CMF C34 H31 N4 O



CM 2

CRN 10047-83-3

CMF C2 H5 O3 S



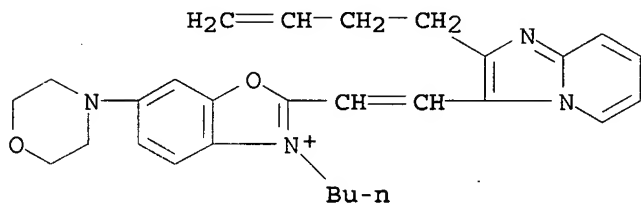
RN 428510-78-5 HCAPLUS

CN Benzoxazolium, 2-[2-[2-(3-butenyl)imidazo[1,2-a]pyridin-3-yl]ethenyl]-3-butyl-6-(4-morpholinyl)-, methanesulfonate (9CI) (CA INDEX NAME)

CM 1

CRN 428510-77-4

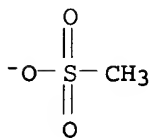
CMF C28 H33 N4 O2



CM 2

CRN 16053-58-0

CMF C H3 O3 S



RN 428510-80-9 HCAPLUS

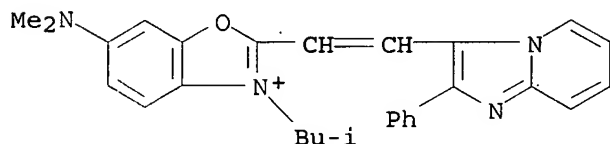
CN Benzoxazolium, 6-(dimethylamino)-3-(2-methylpropyl)-2-[2-(2-phenylimidazo[1,2-a]pyridin-3-yl)ethenyl]-, salt with

trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 428510-79-6

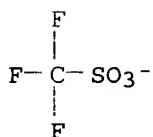
CMF C28 H29 N4 O



CM 2

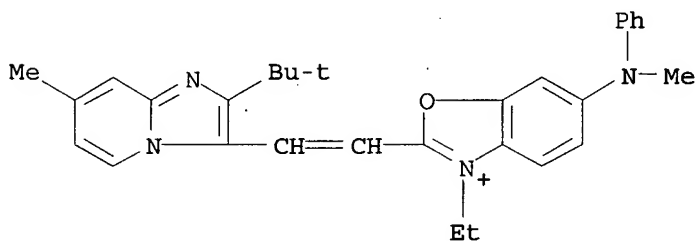
CRN 37181-39-8

CMF C F3 O3 S



RN 428510-82-1 HCAPLUS

CN Benzoxazolium, 2-[2-[2-(1,1-dimethylethyl)-7-methylimidazo[1,2-a]pyridin-3-yl]ethenyl]-3-ethyl-6-(methylphenylamino)-, iodide (9CI) (CA INDEX NAME)



● I⁻

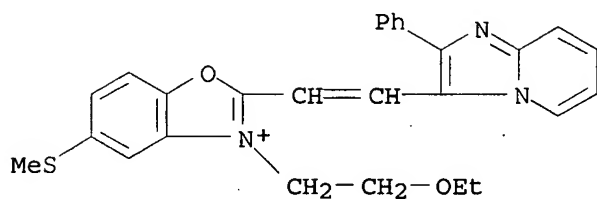
RN 428510-85-4 HCAPLUS

CN Benzoxazolium, 3-(2-ethoxyethyl)-5-(methylthio)-2-[2-(2-phenylimidazo[1,2-a]pyridin-3-yl)ethenyl]-, salt with 4-methylbenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 428510-84-3

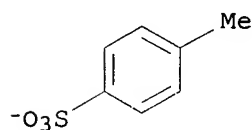
CMF C27 H26 N3 O2 S



CM 2

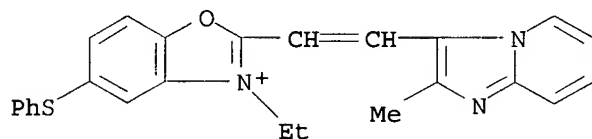
CRN 16722-51-3

CMF C7 H7 O3 S



RN 428510-87-6 HCAPLUS

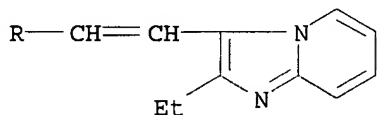
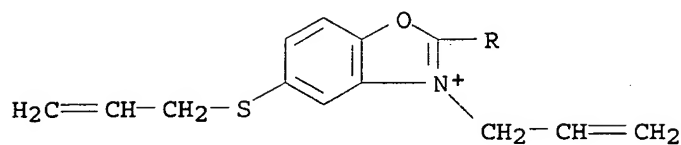
CN Benzoxazolium, 3-ethyl-2-[2-(2-methylimidazo[1,2-a]pyridin-3-yl)ethenyl]-5-(phenylthio)-, iodide (9CI) (CA INDEX NAME)



● I⁻

RN 428510-88-7 HCAPLUS

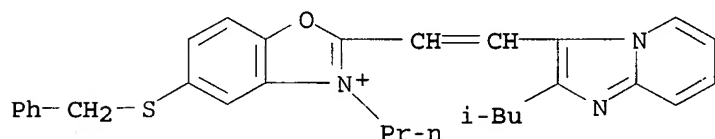
CN Benzoxazolium, 2-[2-(2-ethylimidazo[1,2-a]pyridin-3-yl)ethenyl]-3-(2-propenyl)-5-(2-propenylthio)-, iodide (9CI) (CA INDEX NAME)



● I⁻

RN 428510-89-8 HCAPLUS

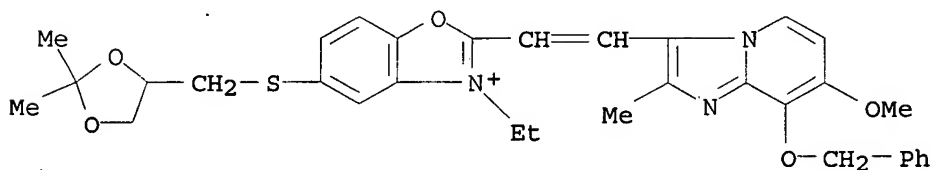
CN Benzoxazolium, 2-[2-[2-(2-methylpropyl)imidazo[1,2-a]pyridin-3-yl]ethenyl]-5-[(phenylmethyl)thio]-3-propyl-, iodide (9CI) (CA INDEX NAME)



● I⁻

RN 428510-92-3 HCAPLUS

CN Benzoxazolium, 5-[[[(2,2-dimethyl-1,3-dioxolan-4-yl)methyl]thio]-3-ethyl-2-[2-[7-methoxy-2-methyl-8-(phenylmethoxy)imidazo[1,2-a]pyridin-3-yl]ethenyl]-, iodide (9CI) (CA INDEX NAME)



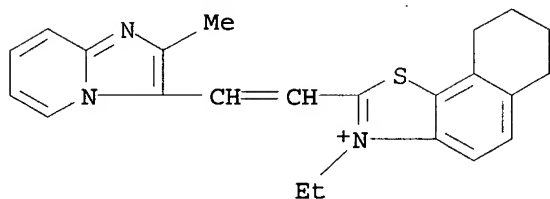
● I⁻

RN 428510-94-5 HCAPLUS

CN Naphtho[2,1-d]thiazolium, 3-ethyl-6,7,8,9-tetrahydro-2-[2-(2-methylimidazo[1,2-a]pyridin-3-yl)ethenyl]-, salt with 4-methylbenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

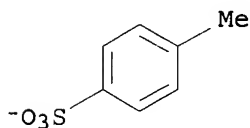
CM 1

CRN 428510-93-4
CMF C23 H24 N3 S

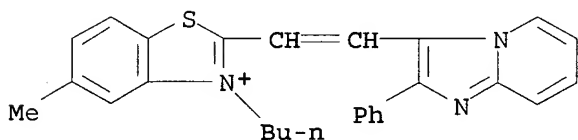


CM 2

CRN 16722-51-3
CMF C7 H7 O3 S

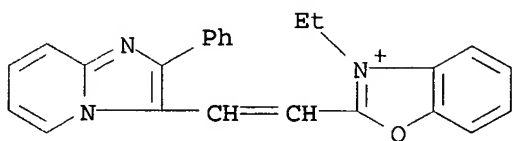


RN 428510-95-6 HCAPLUS
CN Benzothiazolium, 3-butyl-5-methyl-2-[2-(2-phenylimidazo[1,2-a]pyridin-3-yl)ethenyl]-, iodide (9CI) (CA INDEX NAME)



● I⁻

IT 428510-65-0P
RL: MOA (Modifier or additive use); SPN (Synthetic preparation);
PREP (Preparation); USES (Uses)
(azaindolizine photosensitizer in visible light-curable photoimaging
composition suitable for laser imaging application)
RN 428510-65-0 HCAPLUS
CN Benzoxazolium, 3-ethyl-2-[2-(2-phenylimidazo[1,2-a]pyridin-3-yl)ethenyl]-,
iodide (9CI) (CA INDEX NAME)

● I⁻

L45 ANSWER 17 OF 44 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 2002:253088 HCAPLUS

DN 136:286596

TI Radiation sensitive resin composition

IN Miyaji, Masaaki; Nagai, Tomoki; Yada, Yuji; Numata, Jun; Nishimura, Yukio; Yamamoto, Masafumi; Ishii, Hiroyuki; Kajita, Toru; Shimokawa, Tsutomu

PA JSR Corporation, Japan

SO Eur. Pat. Appl., 71 pp.

CODEN: EPXXDW

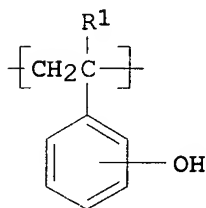
DT Patent

LA English

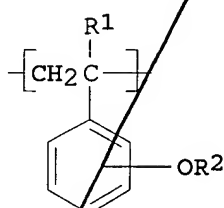
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|---|------|----------|-----------------|----------|
| PI | EP 1193558 | A2 | 20020403 | EP 2001-122213 | 20010917 |
| | EP 1193558 | A3 | 20020814 | | |
| | R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO | | | | |
| | JP 2002202604 | A2 | 20020719 | JP 2000-401302 | 20001228 |
| | JP 2002162746 | A2 | 20020607 | JP 2001-280035 | 20010914 |
| | US 2002058201 | A1 | 20020516 | US 2001-953941 | 20010918 |
| PRAI | JP 2000-282689 | A | 20000818 | | |
| | JP 2000-401302 | A | 20001228 | | |

GI



I



II

AB A chemical amplified radiation sensitive resin composition comprises a specific copolymer and a photoacid generator, wherein the copolymer contains the recurring unit I and/or II and $\text{CH}_2\text{CR}_1(\text{C}=\text{O})\text{NR}_3\text{R}_4$ ($\text{R}_1 = \text{H}, \text{Me}$; $\text{R}_2 = \text{C}_4\text{-10}$ tertiary alkyl; $\text{R}_3, 4 = \text{H}, \text{C}_1\text{-12 alkyl}, \text{C}_6\text{-15 aromatic}, \text{C}_1\text{-12 alkoxy}$, or R_3 and R_4 may form, in combination and together with the nitrogen atom with which the R_3 and R_4 groups bond, a $\text{C}_3\text{-14}$ cyclic structure, provided that R_3 and R_4 are not a hydrogen atom at the same time). The composition effectively responds to various radiations, exhibits excellent resolution and pattern configuration and minimal iso-dense bias, and can form fine patterns at a high precision and in a stable manner.

IC ICM G03F007-038
ICS G03F007-039; G03F007-004

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35, 38

IT **Photoresists**
(chemical amplified; **radiation** sensitive resin composition for)

IT 102-60-3 102-71-6, Triethanolamine, uses 1008-89-5, 2-Phenylpyridine 1116-76-3, Tri-n-octylamine 193810-83-2 330576-56-2, N-t-Butoxycarbonyldicyclohexylamine 406198-67-2
RL: TEM (Technical or engineered material use); USES (Uses)
(acid diffusion control agent; **radiation** sensitive resin composition for **photoresist** containing)

IT 66003-78-9, Triphenylsulfoniumtrifluoromethanesulfonate 84563-54-2, Bis(4-tert-butylphenyl)iodonium trifluoromethanesulfonate 133710-62-0 138529-81-4, Bis(cyclohexylsulfonyl)diazomethane 185195-30-6D, Bis(4-tert-butylphenyl)iodonium 10-camphorsulfonate, reaction product with Et vinyl ether 194999-85-4 205514-94-9, N-(10-Camphorsulfonyloxy)succinimide 406198-76-3 406198-77-4
RL: TEM (Technical or engineered material use); USES (Uses)
(acid generator; **radiation** sensitive resin composition for **photoresist** containing)

IT 542-92-7, Cyclopentadiene, reactions 2680-03-7, N,N-Dimethylacrylamide
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of **radiation** sensitive resin composition for **photoresist**)

IT 25171-46-4P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of **radiation** sensitive resin composition for **photoresist**)

IT 109-92-2DP, Ethyl vinyl ether, reaction product with poly(hydroxystyrene) 928-55-2DP, Ethyl-1-propenyl ether, reaction product with poly(hydroxystyrene) 2182-55-0DP, Cyclohexyl vinyl ether, reaction product with poly(hydroxystyrene) 24979-70-2DP, Poly(p-hydroxystyrene), reaction product with Et vinyl ether and Et propenyl ether 24979-70-2DP, Poly(p-hydroxystyrene), reaction product with di-Bu carbonate 34619-03-9DP, Di-tert-butyl carbonate, reaction product with poly(hydroxystyrene) 95418-60-3DP, Poly (p-tert-Butoxystyrene), hydrolyzed, and/or reaction product with cyclohexyl vinyl ether 123589-22-0DP, p-tert-Butoxystyrene-p-hydroxystyrene copolymer, reaction product with Et vinyl ether 221524-18-1DP, reaction product with Et vinyl ether 221549-67-3DP, hydrolyzed 340964-44-5P 357167-14-7P 406198-55-8DP, hydrolyzed 406198-56-9DP, hydrolyzed 406198-57-0DP, hydrolyzed 406198-58-1DP, hydrolyzed 406198-60-5DP, hydrolyzed 406198-61-6DP, hydrolyzed 406198-62-7DP, hydrolyzed 406198-63-8DP, hydrolyzed 406198-64-9DP, hydrolyzed 406198-68-3P 406198-69-4P 406198-70-7P 406198-71-8P 406198-72-9P 406198-73-0P 406198-74-1P 406198-75-2P
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(resin; **radiation** sensitive resin composition for **photoresist** containing)

IT 406198-62-7DP, hydrolyzed
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(resin; **radiation** sensitive resin composition for **photoresist** containing)

RN 406198-62-7 HCAPLUS

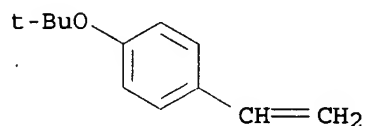
CN Phenol, 4-ethenyl-, acetate, polymer with 1-(1,1-dimethylethoxy)-4-

ethenylbenzene and 1-(1-oxo-2-propenyl)-1H-imidazole (9CI) (CA INDEX NAME)

CM 1

CRN 95418-58-9

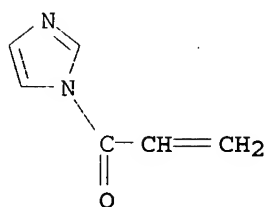
CMF C12 H16 O



CM 2

CRN 40736-25-2

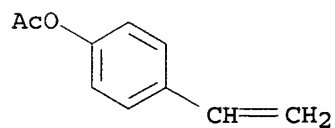
CMF C6 H6 N2 O



CM 3

CRN 2628-16-2

CMF C10 H10 O2



L45 ANSWER 18 OF 44 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 2002:219915 HCAPLUS

DN 136:270567

TI Photosensitive polymer composition and its use in **photosensitive** material for **resist** pattern formation

IN Yoshikawa, Katsumasa; Tarumoto, Tadahiro; Komatsu, Shihoko; Miki, Tetsuzo

PA Hodogaya Chemical Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 5 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

PATENT NO.

KIND

DATE

APPLICATION NO.

DATE

KATHLEEN FULLER EIC 1700 REMSON 4B28 571/272-2505

PI JP 2002082434 A2 20020322 JP 2000-271532 20000907

PRAI JP 2000-271532 20000907

AB The composition with high sensitivity, comprises CO₂H-containing polymers, ethylenically unsatd. group-containing photopolymerizable compds., and a photoinitiator of 2-(2,3-dichlorophenyl)-4,5-bis(4-(methoxyphenyl)imidazole dimer. The composition is applied on a support and dried to give the photosensitive material, which is suitable for printed circuit board manufacture

IC ICM G03F007-029

ICS C08F002-44; C08F002-50; C08F291-06; G03F007-027; G03F007-032; H05K003-00

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 37, 76

ST **photosensitive polymer resist photoinitiator**
dichlorophenylbismethoxyphenylimidazole dimer; printed circuit manuf

IT **photoresist photoinitiator**
Polyoxyalkylenes, preparation
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(acrylic; **photosensitive polymer composition containing photoinitiator for resist pattern formation**)

IT Polymerization catalysts
(photopolymn.; **photosensitive polymer composition containing photoinitiator for resist pattern formation**)

IT **Photoresists**
(**photosensitive polymer composition containing photoinitiator for resist pattern formation**)

IT 405095-95-6P
RL: CAT (Catalyst use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)
(**photosensitive polymer composition containing photoinitiator for resist pattern formation**)

IT 25300-85-0P, Ethyl methacrylate-methacrylic acid-styrene copolymer
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PNU (Preparation, unclassified); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)
(**photosensitive polymer composition containing photoinitiator for resist pattern formation**)

IT 26570-48-9
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); POF (Polymer in formulation); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(**photosensitive polymer composition containing photoinitiator for resist pattern formation**)

IT 3524-68-3, Tetramethylolmethane triacrylate
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(**photosensitive polymer composition containing photoinitiator for resist pattern formation**)

IT 405095-96-7P, Ethyl methacrylate-methacrylic acid-styrene-polyethylene glycol diacrylate-tetramethylolmethane triacrylate copolymer
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(**photosensitive polymer composition containing photoinitiator for resist pattern formation**)

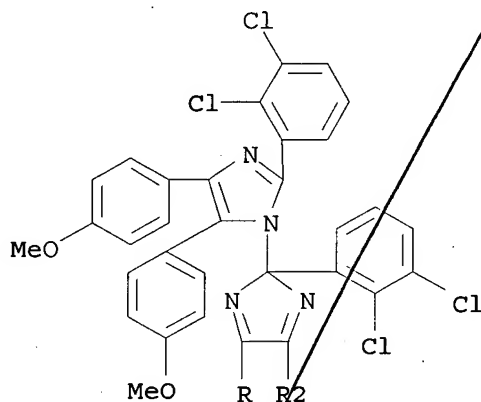
IT 405095-95-6P

RL: CAT (Catalyst use); PNU (Preparation, unclassified); PREP
(Preparation); USES (Uses)
(photosensitive polymer composition containing photoinitiator
for resist pattern formation)

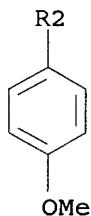
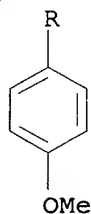
RN 405095-95-6 HCAPLUS

CN 1H-Imidazole, 2-(2,3-dichlorophenyl)-1-[2-(2,3-dichlorophenyl)-4,5-bis(4-methoxyphenyl)-2H-imidazol-2-yl]-4,5-bis(4-methoxyphenyl)- (9CI) (CA
INDEX NAME)

PAGE 1-A



PAGE 2-A



L45 ANSWER 19 OF 44 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 2001:904766 HCAPLUS

DN 136:29185

TI Photosensitive resin composition and photosensitive material using the same

IN Miki, Tetsuzo; Kikkawa, Katsumasa; Komatsu, Shihoko; Tarumoto, Naohiro

PA Hodogaya Chemical Co., Ltd., Japan

SO PCT Int. Appl., 20 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|---|------|----------|-----------------|----------|
| PI | WO 2001095033 | A1 | 20011213 | WO 2001-JP4748 | 20010605 |
| | W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM | | | | |
| | RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG | | | | |
| | EP 1290499 | A1 | 20030312 | EP 2001-934553 | 20010605 |
| | R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR | | | | |
| | JP 2003536104 | T2 | 20031202 | JP 2002-502522 | 20010605 |
| PRAI | JP 2000-168721 | A | 20000606 | | |
| | WO 2001-JP4748 | W | 20010605 | | |

AB The present invention relates to a high sensitive photosensitive material used for manufacturing print circuit boards, developing a high productivity, and

to a photosensitive resin composition used therein. A photosensitive resin composition comprises: (A) a carboxyl group-containing polymer; (B) a photopolymerizable compound having an ethylenic unsatd. group, and (C) 2-(2-chlorophenyl)-4,5-bis(4-methoxyphenyl)imidazole dimer as a photoinitiator compound

IC ICM G03F007-031

CC 74-5 (Radiation Chemistry, Photochemistry, and **Photographic** and Other Reprographic Processes)

Section cross-reference(s): 35, 38, 76

IT **Photoresists**Semiconductor device fabrication
(**photosensitive** resin composition for)

IT 29969-84-4P

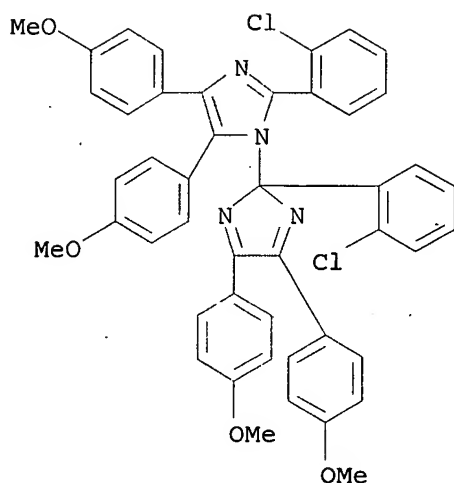
RL: CAT (Catalyst use); SPN (Synthetic preparation); **PREP**
(**Preparation**); USES (Uses)
(photoinitiator for photosensitive resin composition)

IT 29969-84-4P

RL: CAT (Catalyst use); SPN (Synthetic preparation); **PREP**
(**Preparation**); USES (Uses)
(photoinitiator for photosensitive resin composition)

RN 29969-84-4 HCAPLUS

CN 1H-Imidazole, 2-(2-chlorophenyl)-1-[2-(2-chlorophenyl)-4,5-bis(4-methoxyphenyl)-2H-imidazol-2-yl]-4,5-bis(4-methoxyphenyl)- (9CI) (CA INDEX NAME)



RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L45 ANSWER 20 OF 44 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2001:904764 HCAPLUS
DN 136:29184
TI Photosensitive resin composition and photosensitive material using the same
IN Miki, Tetsuzo; Kikkawa, Katsumasa; Komatsu, Shihoko; Tarumoto, Naohiro
PA Hodogaya Chemical Co., Ltd., Japan
SO PCT Int. Appl., 16 pp.
CODEN: PIXXD2

DT Patent
LA English

FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|------|----------|-----------------|----------|
| WO 2001095032 | A1 | 20011213 | WO 2001-JP4570 | 20010530 |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG | | | | |

PRAI JP 2000-166045 A 20000602

AB The present invention relates to a highly sensitive photosensitive material used for preparing print circuit boards. A photosensitive resin composition comprises: (A) a carboxyl group-containing polymer; (B) a photopolymerizable compound having an ethylenic unsatd. group, and (C) 2-(2-trifluoromethylphenyl)-4,5-bis(4-methoxyphenyl)imidazole dimer as a photoinitiator compound

IC ICM G03F007-031

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

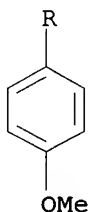
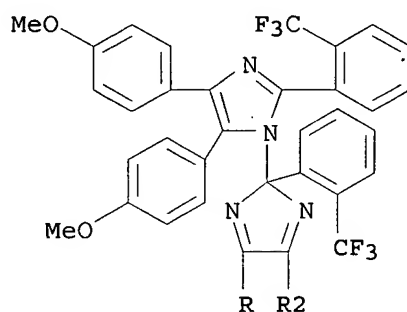
Section cross-reference(s): 35, 38, 76

IT Photoresists

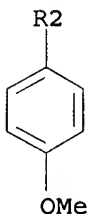
Semiconductor device fabrication

(photosensitive resin composition for)
IT 379259-10-6P
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP
(Preparation); USES (Uses)
(photoinitiator for photosensitive resin composition)
IT 379259-10-6P
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP
(Preparation); USES (Uses)
(photoinitiator for photosensitive resin composition)
RN 379259-10-6 HCAPLUS
CN 1H-Imidazole, 1-[4,5-bis(4-methoxyphenyl)-2-[2-(trifluoromethyl)phenyl]-2H-
imidazol-2-yl]-4,5-bis(4-methoxyphenyl)-2-[2-(trifluoromethyl)phenyl]-
(9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L45 ANSWER 21 OF 44 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2001:704336 HCAPLUS
DN 136:12698

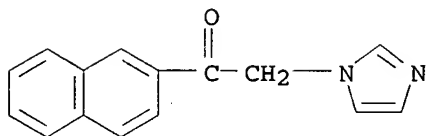
KATHLEEN FULLER EIC 1700 REMSON 4B28 571/272-2505

TI Synthesis of Tetraorganylbamate Salts: Photogeneration of Tertiary Amines
 AU Sarker, Ananda M.; Kaneko, Yuji; Neckers, D. C.
 CS Center for Photochemical Sciences, Bowling Green State University, Bowling
 Green, OH, 43403, USA
 SO Chemistry of Materials (2001), 13(11), 3949-3953
 CODEN: CMATEX; ISSN: 0897-4756
 PB American Chemical Society
 DT Journal
 LA English
 AB The authors report the synthesis of a series of new ammonium
 tetraorganylbates strategically designed to photogenerate tertiary
 amines. Expts. in acetonitrile show amine formation with reasonably high
 quantum yield that depends on the photoreactive acceptor, the borate, and
 the substituents on the nitrogen atom. The reactive triplet state is
 reduced by the borate, and this is followed by rapid homolysis of the
 carbon-nitrogen bond.
 CC 74-1 (Radiation Chemistry, Photochemistry, and Photographic and
 Other Reprographic Processes)
 ST ammonium borate deriv photolysis amine photogeneration;
 photolithog photoresist ammonium tetraorganylbamate
 amine photogeneration
 IT Photoresists
 (photolysis of ammonium tetraorganylbates designed to
 photogenerate tertiary amines for photolithog. applications in relation
 to)
 IT 214074-76-7P, N-(2-Acetylnaphthone)-N,N,N-tributylammonium
 triphenylbutylborate 214074-77-8P, N-(2-Acetylnaphthone)-N,N,N-
 tributylammonium tetraphenylborate 214074-80-3P, N-(2-
 Acetylbenzo[b]furan)-N,N,N-tributylammonium triphenylbutylborate
 214074-81-4P, N-(2-Acetylbenzo[b]furan)-N,N,N-tributylammonium
 tetraphenylborate 214074-84-7P, N-(2-Acetylbenzo[b]thiophene)-N,N,N-
 tributylammonium triphenylbutylborate 214074-85-8P, N-(2-
 Acetylbenzo[b]thiophene)-N,N,N-tributylammonium tetraphenylborate
 376644-79-0P, N-(2-Acetylnaphthone)-N,N,N-triethylammonium
 tetraphenylborate 376644-80-3P, N-(2-Acetylnaphthone)imidazole
 tetraphenylborate
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical
 process); PRP (Properties); RCT (Reactant); SPN (Synthetic preparation);
 PREP (Preparation); PROC (Process); RACT (Reactant or reagent)
 (photolysis of ammonium tetraorganylbates designed to photogenerate
 tertiary amines for photolithog. applications)
 IT 376644-76-7P, N-(2-Acetylnaphthone)-N,N,N-triethylammonium bromide
 376644-77-8P, N-(2-Acetylnaphthone)imidazole bromide
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP
 (Preparation); RACT (Reactant or reagent)
 (reaction with sodium tetraphenylborate)
 IT 376644-80-3P, N-(2-Acetylnaphthone)imidazole tetraphenylborate
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical
 process); PRP (Properties); RCT (Reactant); SPN (Synthetic preparation);
 PREP (Preparation); PROC (Process); RACT (Reactant or reagent)
 (photolysis of ammonium tetraorganylbates designed to photogenerate
 tertiary amines for photolithog. applications)
 RN 376644-80-3 HCAPLUS
 CN Borate(1-), tetraphenyl-, hydrogen, compd. with 2-(1H-imidazol-1-yl)-1-(2-
 naphthalenyl)ethanone (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 64212-22-2

CMF C15 H12 N2 O

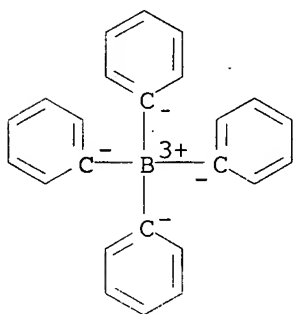


CM 2

CRN 33906-65-9

CMF C24 H20 B . H

CCI CCS

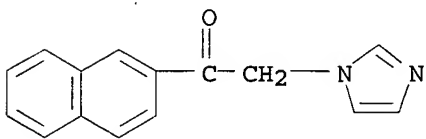


● H⁺

IT 376644-77-8P, N-(2-Acetylnaphthone)imidazole bromide
 RL: RCT (Reactant); SPN (Synthetic preparation); **PREP**
 (**Preparation**); RACT (Reactant or reagent)
 (reaction with sodium tetrakisphenylborate)

RN 376644-77-8 HCAPLUS

CN Ethanone, 2-(1H-imidazol-1-yl)-1-(2-naphthalenyl)-, monohydrobromide (9CI)
 (CA INDEX NAME)



● HBr

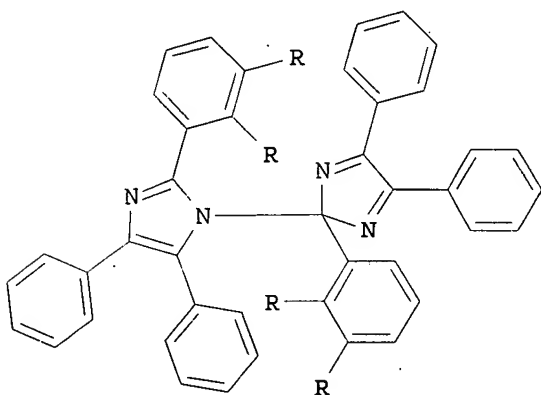
RE.CNT 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L45 ANSWER 22 OF 44 HCAPLUS COPYRIGHT 2005 ACS on STN

KATHLEEN FULLER EIC 1700 REMSON 4B28 571/272-2505

AN 2001:595540 HCAPLUS
 DN 135:187703
 TI Light-sensitive resin composition for transferable photoresist precursor
 and method for pattern formation for printed circuit board production
 using same
 IN Hidaka, Takahiro; Natori, Michiko
 PA Hitachi Chemical Co., Ltd., Japan; Hodogaya Chemical Co., Ltd.
 SO Jpn. Kokai Tokkyo Koho, 9 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|-------------------|------|----------|-----------------|----------|
| PI | JP 2001222106 | A2 | 20010817 | JP 2000-35647 | 20000208 |
| PRAI | JP 2000-35647 | | 20000208 | | |
| OS | MARPAT 135:187703 | | | | |
| GI | | | | | |



I

AB The title composition contains a binder resin, ethylenic unsat.
 photopolymerizable monomers, and photopolymn. initiators, wherein the
 photopolymn. initiator contains compound I (R = halo). The composition, which
 contains the aforementioned compound as the **photopolymn.**
 initiator, provides **resist** precursor of the high sensitivity and
 the printed circuit boards of the high resolution pattern and the prevented
 soiling from soldering.

IC ICM G03F007-031
 ICS G03F007-004; G03F007-027; G03F007-033; G03F007-40; H05K003-06;
 H05K003-18

CC 74-5 (Radiation Chemistry, Photochemistry, and **Photographic** and
 Other Reprographic Processes)
 Section cross-reference(s): 76

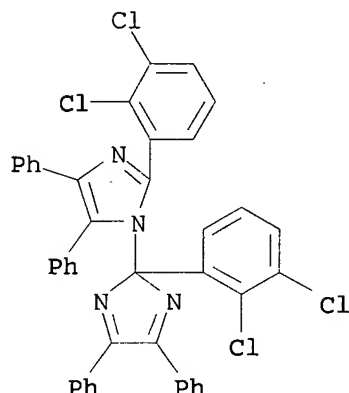
IT 354810-34-7P
 RL: MOA (Modifier or additive use); SPN (Synthetic preparation);
 PREP (Preparation); USES (Uses)
 (photopolymn. initiator in light-sensitive resin composition)

IT 354810-34-7P
 RL: MOA (Modifier or additive use); SPN (Synthetic preparation);
 PREP (Preparation); USES (Uses)
 (photopolymn. initiator in light-sensitive resin composition)

RN 354810-34-7 HCAPLUS

CN 1H-Imidazole, 2-(2,3-dichlorophenyl)-1-[2-(2,3-dichlorophenyl)-4,5-

diphenyl-2H-imidazol-2-yl]-4,5-diphenyl- (9CI) (CA INDEX NAME)



L45 ANSWER 23 OF 44 HCAPLUS COPYRIGHT 2005 ACS on STN
 AN 2001:261365 HCAPLUS
 DN 134:302973
 TI Electrophotographic image material and electrophotographic imaging method
 IN Oishi, Yasushi; Kubodera, Seichi; Sato, Kozo
 PA Fuji Photo Film Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 25 pp.
 CODEN: JKXXAF

DT Patent
 LA Japanese
 FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|----------|-----------------|----------|
| PI | JP 2001100449 | A2 | 20010413 | JP 1999-274592 | 19990928 |
| | US 6656649 | B1 | 20031202 | US 2000-670718 | 20000928 |
| PRAI | JP 1999-274592 | A | 19990928 | | |

AB The electrophotog. imaging material is an electrophotog. toner and/or electrophotog. toner receptor containing a dye-fixing agent. The dye-fixing agent can be activated by heat or Diels-Alder reaction. The electrophotog. imaging material may contain a color fading-resistant agent and/or UV absorber. The electrophotog. imaging material produces images with excellent color reproduction and color d.

IC ICM G03G007-00

ICS G03G009-09; G03G009-08

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT 9037-24-5, Amberlyst 15 17450-30-5, N-Octadecylmaleimide
 25232-42-2, Poly(vinylimidazole) 25820-85-3 30551-89-4
 77728-15-5 334520-92-2 334521-25-4

RL: MOA (Modifier or additive use); USES (Uses)

(dye-fixing agent in electrophotog. image material for improving color reproduction and d.)

IT 25232-42-2, Poly(vinylimidazole)

RL: MOA (Modifier or additive use); USES (Uses)

(dye-fixing agent in electrophotog. image material for improving color reproduction and d.)

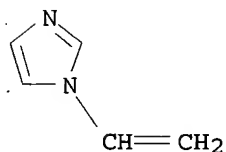
RN 25232-42-2 HCAPLUS

CN 1H-Imidazole, 1-ethenyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 1072-63-5

CMF C5 H6 N2



L45 ANSWER 24 OF 44 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 2000:686601 HCAPLUS

DN 133:259333

TI Photosensitive epoxy (meth)acrylate polymer compositions and printed circuit boards

IN Shimada, Kenichi

PA Ibiden Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 15 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|---------------|------|----------|-----------------|----------|
| PI | JP 2000267274 | A2 | 20000929 | JP 1999-66990 | 19990312 |
| PRAI | JP 1999-66990 | | 19990312 | | |

AB The compns. comprise (a) epoxy (meth)acrylate, (b) hardening agent, and (c) P-containing (meth)acrylic acid ester monomers. Preferable P-containing (meth)acrylic acid ester monomers are given as Markush structures. Printed wiring boards consisting of a substrate having elec. circuits and photosensitive polymer layers comprising of the above stated compns. are also claimed. The compns. have excellent heat cycle characteristics and are suitable as solder resist layers, plating resist layers, interlayer insulators, etc.

IC ICM G03F007-027

ICS G03F007-027; C08F002-50; C08F290-06; H05K003-00; H05K003-28; C08F230-02

CC 74-4 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 38, 76

IT Photoimaging materials

Printed circuit boards

Solder resists

(photosensitive epoxy (meth)acrylate polymer compns. containing P-containing (meth)acrylate monomers and printed circuit boards with the photosensitive polymer layers)

IT 23996-25-0, 2E 4MZ-CN

RL: DEV (Device component use); MOA (Modifier or additive use);

USES (Uses)

(curing agent; photosensitive epoxy (meth)acrylate polymer compns. containing P-containing (meth)acrylate monomers and printed circuit boards

with

the photosensitive polymer layers)

IT 23996-25-0, 2E 4MZ-CN

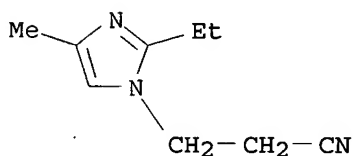
RL: DEV (Device component use); MOA (Modifier or additive use);

USES (Uses)

(curing agent; photosensitive epoxy (meth)acrylate polymer compns.
containing P-containing (meth)acrylate monomers and printed circuit boards
with the photosensitive polymer layers)

RN 23996-25-0 HCAPLUS

CN 1H-Imidazole-1-propanenitrile, 2-ethyl-4-methyl- (9CI) (CA INDEX NAME)



L45 ANSWER 25 OF 44 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2000:383719 HCAPLUS
DN 133:18771
TI Cationic aminoanthraquinones and their use as hair dyes
IN Genet, Alain; Lagrange, Alain
PA L'Oreal, Fr.
SO Eur. Pat. Appl., 17 pp.
CODEN: EPXXDW
DT Patent
LA French
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|---|------|----------|-----------------|----------|
| PI | EP 1006154 | A1 | 20000607 | EP 1999-402629 | 19991022 |
| | R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO | | | | |
| | FR 2786484 | A1 | 20000602 | FR 1998-15046 | 19981130 |
| | FR 2786484 | B1 | 20010105 | | |
| | AT 216413 | E | 20020515 | AT 1999-402629 | 19991022 |
| | ES 2175910 | T3 | 20021116 | ES 1999-402629 | 19991022 |
| | CA 2290843 | C | 20030415 | CA 1999-2290843 | 19991126 |
| | CA 2290843 | AA | 20000530 | | |
| | US 6437149 | B1 | 20020820 | US 1999-449539 | 19991129 |
| | JP 2000229947 | A2 | 20000822 | JP 1999-340633 | 19991130 |
| | JP 3531801 | B2 | 20040531 | | |
| | US 2003073853 | A1 | 20030417 | US 2002-190518 | 20020709 |
| | US 6645259 | B2 | 20031111 | | |
| PRAI | FR 1998-15046 | A | 19981130 | | |
| | US 1999-449539 | A3 | 19991129 | | |

OS MARPAT 133:18771

AB Cationic aminoanthraquinones are disclosed which have the cationic charge delocalized on a polyazo 5-membered heterocycle, such as imidazolium or pyrazolium. These compds. are suitable as hair dyes with improved resistance to photofading. Thus, 1-(2-bromoethylamino)anthraquinone was condensed with 1-methyl-1H-imidazole to give a red dye which provided a reddish copper shade on gray hair.

IC ICM C09B001-20

ICS A61K007-13

CC 41-4 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)

Section cross-reference(s): 62

IT 272784-30-2P

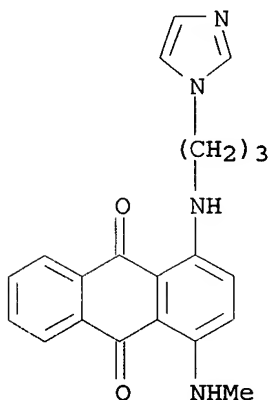
RL: IMF (Industrial manufacture); RCT (Reactant); **PREP**
(Preparation); RACT (Reactant or reagent)
(intermediate; imidazolium and pyrazolium aminoanthraquinone dyes for hair)

IT 272784-30-2P

RL: IMF (Industrial manufacture); RCT (Reactant); **PREP**
(Preparation); RACT (Reactant or reagent)
(intermediate; imidazolium and pyrazolium aminoanthraquinone dyes for hair)

RN 272784-30-2 HCAPLUS

CN 9,10-Anthracenedione, 1-[[3-(1H-imidazol-1-yl)propyl]amino]-4-(methylamino)- (9CI) (CA INDEX NAME)



RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L45 ANSWER 26 OF 44 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 1999:231796 HCAPLUS

DN 130:318597

TI Photosensitive polymer composition and color filter

IN Takazaki, Ryuichiro; Matsuo, Fumiyuki

PA Mitsubishi Chemical Industries Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 13 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|----------|-----------------|----------|
| PI | JP 11095425 | A2 | 19990409 | JP 1997-254803 | 19970919 |
| PRAI | JP 1997-254803 | | 19970919 | | |

AB The comps. contain (a) binder resins containing ethylenically unsatd. double bonds and carboxyl groups, (b) azide compds., and (c) photopolymn. initiators. Color filters prepared by formation of black matrix using the above comps. on transparent substrates are also claimed. Comps. show excellent developability with alkaline and give patterns with high resolution and accuracy even when blended with black pigments.

IC ICM G03F007-027

ICS G03F007-027; C08F299-00; G02B005-00; G02B005-20; G03F007-004; G03F007-008

CC 74-5 (Radiation Chemistry, Photochemistry, and **Photographic** and Other Reprographic Processes)

Section cross-reference(s): 38, 73

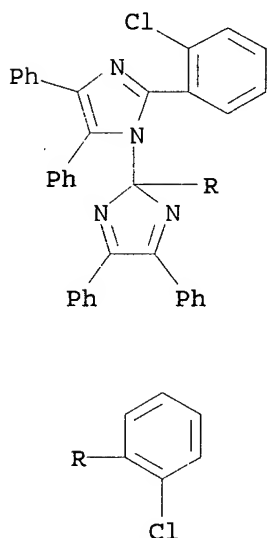
ST **photosensitive polymer resist** color filter; pigment dispersed **photopolymer resist**; acrylic polymer azide photoresist

IT 90-93-7, 4,4'-Bis(diethylamino)benzophenone 7189-82-4
 RL: DEV (Device component use); MOA (Modifier or additive use);
 USES (Uses)
 (photopolymn. initiator; photosensitive polymer compns. containing azides for preparation of color filters)

IT 7189-82-4
 RL: DEV (Device component use); MOA (Modifier or additive use);
 USES (Uses)
 (photopolymn. initiator; photosensitive polymer compns. containing azides for preparation of color filters)

RN 7189-82-4 HCAPLUS

CN 1H-Imidazole, 2-(2-chlorophenyl)-1-[2-(2-chlorophenyl)-4,5-diphenyl-2H-imidazol-2-yl]-4,5-diphenyl- (9CI) (CA INDEX NAME)



L45 ANSWER 27 OF 44 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 1998:685229 HCAPLUS

DN 130:8890

TI **Photosensitive resin composition useful as resist**

IN Sato, Hiroaki

PA Nippon Synthetic Chemical Industry Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 6 pp.
 CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|----------|-----------------|----------|
| PI | JP 10282660 | A2 | 19981023 | JP 1997-110210 | 19970410 |
| PRAI | JP 1997-110210 | | 19970410 | | |

AB The title composition contains (a) a base polymer, (b) ethylenic unsatd. compds. including ≥ 30 weight% $\text{CH}_2:\text{CR}_1\text{CO}_2\text{CHR}_2\text{CH}_2\text{OCO}(\text{CH}_2)_n\text{CO}_2\text{CH}_2\text{CHR}_2\text{OCOC}$ $\text{R}_1:\text{CH}_2$ ($n = 0-10$; $\text{R}_1 = \text{H}$ or Me ; $\text{R}_2 = \text{H}$ or OH) (c) a hexaarylbiimidazole derivative, and (d) a leuco dye. The composition shows high resolution and

photosensitivity and improved peeling properties upon development.

IC ICM G03F007-027
ICS C08F002-50; C09D004-06; G03F007-004; G03F007-033; H05K003-06

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 37

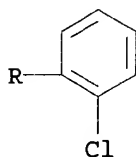
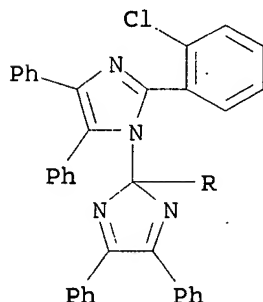
IT **Photoresists**
(photoresist composition containing ethylenic unsatd. compound and hexaarylbiimidazole)

IT 7189-82-4
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(photoresist composition containing ethylenic unsatd. compound and hexaarylbiimidazole)

IT 7189-82-4
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(photoresist composition containing ethylenic unsatd. compound and hexaarylbiimidazole)

RN 7189-82-4 HCAPLUS

CN 1H-Imidazole, 2-(2-chlorophenyl)-1-[2-(2-chlorophenyl)-4,5-diphenyl-2H-imidazol-2-yl]-4,5-diphenyl- (9CI) (CA INDEX NAME)



L45 ANSWER 28 OF 44 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 1998:455475 HCAPLUS

DN 129:168105

TI Photosensitive resin composition containing imidazolesilane compound and photosensitive element using same

IN Ichikawa, Tatsuya; Tanaka, Yoji; Chiba, Tatsuo; Tsuchita, Katsushi; Kumagaya, Masashi

PA Hitachi Chemical Co., Ltd., Japan; Japan Energy K. K.

SO Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF

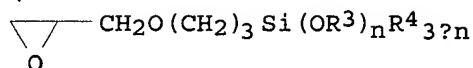
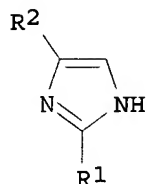
DT Patent

LA Japanese

FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------|------|------|-----------------|------|
|------------|------|------|-----------------|------|

| | | | | | |
|------|-------------------|----|----------|----------------|----------|
| PI | JP 10186657 | A2 | 19980714 | JP 1996-349441 | 19961227 |
| PRAI | JP 1996-349441 | | 19961227 | | |
| OS | MARPAT 129:168105 | | | | |
| GI | | | | | |



AB The title composition contains (a) a carboxyl group-containing binder polymer,
(b)

a photopolymer compound having polymerizable ethylenic unsatd. bonds in its mol., (c) a photopolymer initiator, and (d) an imidazolesilane compound prepared by reacting an imidazole compound I (R1 = H or C1-20 alkyl; R2 = H, vinyl, C1-5 alkyl) with a silane compound II (R3, R4 = C1-3 alkyl; n = 1-3) at 80-200°. The photosensitive element comprises a support coated with a photosensitive layer made of the composition and optionally laminated with a protective film. The composition shows good adhesion to metallic substrates, resistance to plating, especially Au-plating, and chemical resistance.

IC ICM G03F007-033

ICS G03F007-004; G03F007-027; G03F007-028; G03F007-075; G03F007-085;
H05K003-06; H05K003-18; H05K003-28

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and
Other Reprographic Processes)
Section cross-reference(s): 38

IT **Photoresists**

(photosensitive resin composition containing imidazolesilane compound)

IT 149394-70-7P 149394-71-8P 149394-72-9P
149394-73-0P 149394-77-4P 149394-78-5P
149394-79-6P 149394-80-9P 149394-84-3P
149394-85-4P 149394-86-5P 149394-87-6P

RL: MOA (Modifier or additive use); PNU (Preparation,
unclassified); TEM (Technical or engineered material use); **PREP**
(Preparation); USES (Uses)

(photosensitive resin composition containing imidazolesilane compound)

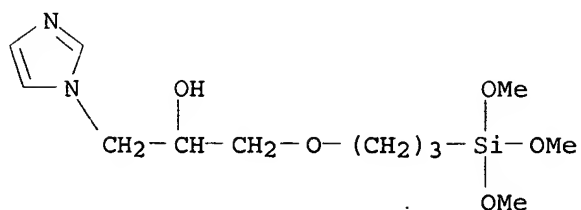
IT 149394-70-7P 149394-71-8P 149394-72-9P
149394-73-0P 149394-77-4P 149394-78-5P
149394-79-6P 149394-80-9P 149394-84-3P
149394-85-4P 149394-86-5P 149394-87-6P

RL: MOA (Modifier or additive use); PNU (Preparation,
unclassified); TEM (Technical or engineered material use); **PREP**
(Preparation); USES (Uses)

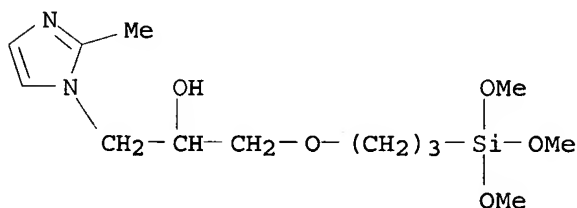
(photosensitive resin composition containing imidazolesilane compound)

RN 149394-70-7 HCAPLUS

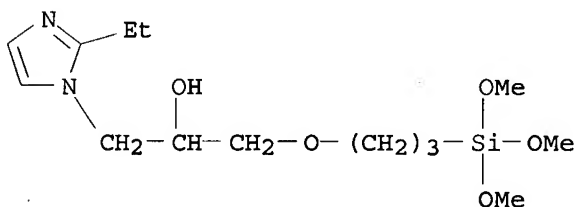
CN 1H-Imidazole-1-ethanol, α -[[3-(trimethoxysilyl)propoxy]methyl]-
(9CI) (CA INDEX NAME)



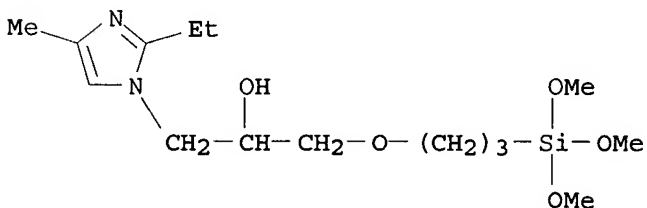
RN 149394-71-8 HCAPLUS
 CN 1H-Imidazole-1-ethanol, 2-methyl-α-[[3-(trimethoxysilyl)propoxy]methyl]- (9CI) (CA INDEX NAME)



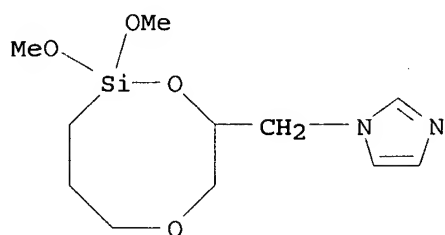
RN 149394-72-9 HCAPLUS
 CN 1H-Imidazole-1-ethanol, 2-ethyl-α-[[3-(trimethoxysilyl)propoxy]methyl]- (9CI) (CA INDEX NAME)



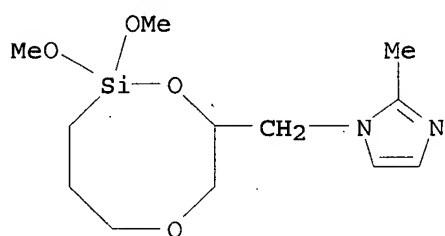
RN 149394-73-0 HCAPLUS
 CN 1H-Imidazole-1-ethanol, 2-ethyl-4-methyl-α-[[3-(trimethoxysilyl)propoxy]methyl]- (9CI) (CA INDEX NAME)



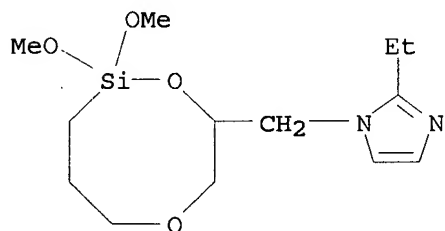
RN 149394-77-4 HCAPLUS
 CN 1H-Imidazole, 1-[(2,2-dimethoxy-1,6-dioxo-2-silacyclooct-8-yl)methyl]- (9CI) (CA INDEX NAME)



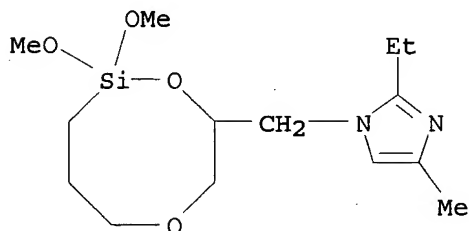
RN 149394-78-5 HCAPLUS
 CN 1H-Imidazole, 1-[(2,2-dimethoxy-1,6-dioxo-2-silacyclooct-8-yl)methyl]-2-methyl- (9CI) (CA INDEX NAME)



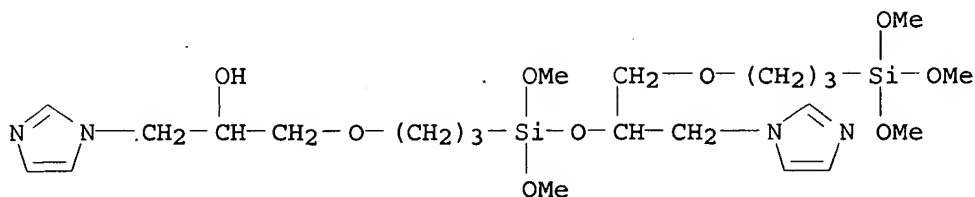
RN 149394-79-6 HCAPLUS
 CN 1H-Imidazole, 1-[(2,2-dimethoxy-1,6-dioxo-2-silacyclooct-8-yl)methyl]-2-ethyl- (9CI) (CA INDEX NAME)



RN 149394-80-9 HCAPLUS
 CN 1H-Imidazole, 1-[(2,2-dimethoxy-1,6-dioxo-2-silacyclooct-8-yl)methyl]-2-ethyl-4-methyl- (9CI) (CA INDEX NAME)

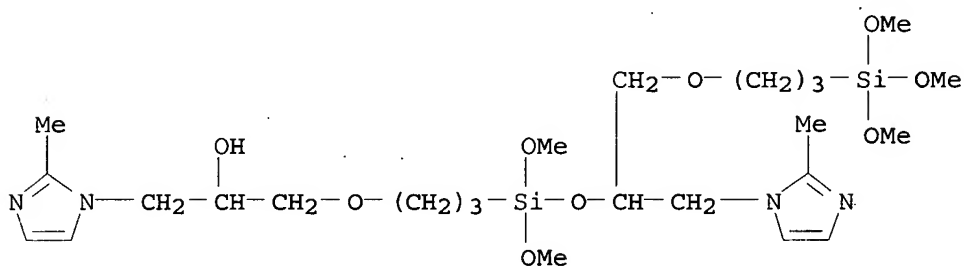


RN 149394-84-3 HCAPLUS
 CN 1H-Imidazole-1-ethanol, α-[8-(1H-imidazol-1-ylmethyl)-6,6,14,14-tetramethoxy-2,7,10,15-tetraoxa-6,14-disilahehexadec-1-yl]- (9CI) (CA INDEX NAME)



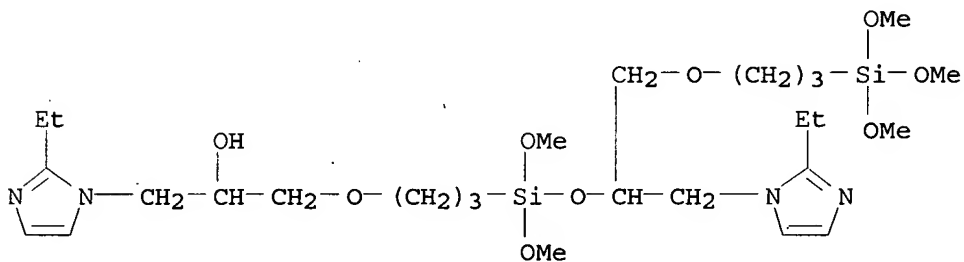
RN 149394-85-4 HCAPLUS

CN 1H-Imidazole-1-ethanol, 2-methyl-α-[6,6,14,14-tetramethoxy-8-[(2-methyl-1H-imidazol-1-yl)methyl]-2,7,10,15-tetraoxa-6,14-disilahexadec-1-yl]- (9CI) (CA INDEX NAME)



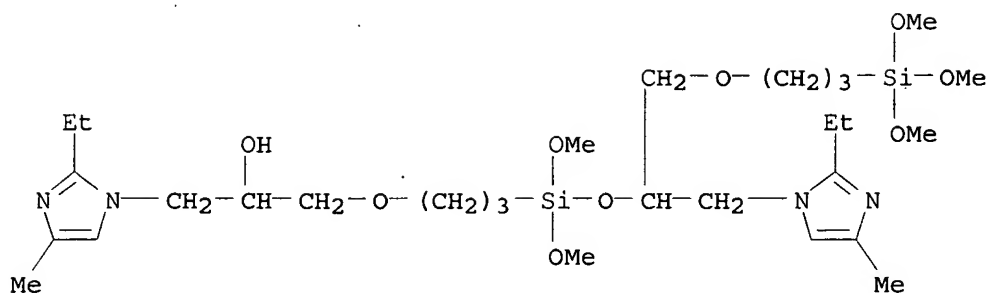
RN 149394-86-5 HCAPLUS

CN 1H-Imidazole-1-ethanol, 2-ethyl-α-[8-[(2-ethyl-1H-imidazol-1-yl)methyl]-6,6,14,14-tetramethoxy-2,7,10,15-tetraoxa-6,14-disilahexadec-1-yl]- (9CI) (CA INDEX NAME)



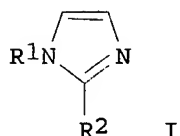
RN 149394-87-6 HCAPLUS

CN 1H-Imidazole-1-ethanol, 2-ethyl-α-[8-[(2-ethyl-4-methyl-1H-imidazol-1-yl)methyl]-6,6,14,14-tetramethoxy-2,7,10,15-tetraoxa-6,14-disilahexadec-1-yl]-4-methyl- (9CI) (CA INDEX NAME)



L45 ANSWER 29 OF 44 HCAPLUS COPYRIGHT 2005 ACS on STN
 AN 1997:602802 HCAPLUS
 DN 127:270490
 TI Positive-working photoresist composition containing imidazole derivative
 IN Nakano, Shigeki; Awaji, Akira; Yamada, Shintaro
 PA Shipley Far-East Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 4 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|-------------------|------|----------|-----------------|----------|
| PI | JP 09236923 | A2 | 19970909 | JP 1996-44587 | 19960301 |
| PRAI | JP 1996-44587 | | 19960301 | | |
| OS | MARPAT 127:270490 | | | | |
| GI | | | | | |



AB The title composition comprises an alkali-soluble novolak resin, a quinonediazide group-containing compound, and an imidazole derivative I (R1 = vinyl, benzyl, C1-5 alkyl, H; R2 = C1-5 alkyl, H). The composition shows good storage stability and provides resist patterns showing good adhesion to substrates. Thus, a photoresist comprised m-cresol-p-cresol-HCHO novolak resin, 2,3,4,4'-tetrahydroxybenzophenone naphthoquinone-1,2-diazido-5-sulfonate, and 1-vinylimidazole.

IC ICM G03F007-085
 ICS G03F007-022; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT Positive photoresists
 (photoresist composition containing novolak resin, quinonediazide compound, and imidazole deriv)

IT 1072-63-5, 1-Vinylimidazole 13750-62-4,
 1-Benzyl-2-methylimidazole
 RL: MOA (Modifier or additive use); TEM (Technical or engineered

material use); USES (Uses)

(photoresist composition containing novolak resin, quinonediazide compound, and imidazole deriv)

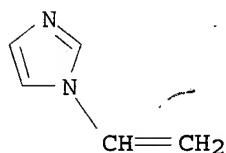
IT 1072-63-5, 1-Vinylimidazole 13750-62-4,
1-Benzyl-2-methylimidazole

RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)

(photoresist composition containing novolak resin, quinonediazide compound, and imidazole deriv)

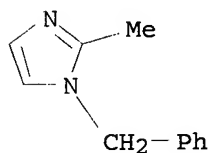
RN 1072-63-5 HCAPLUS

CN 1H-Imidazole, 1-ethenyl- (9CI) (CA INDEX NAME)



RN 13750-62-4 HCAPLUS

CN 1H-Imidazole, 2-methyl-1-(phenylmethyl)- (9CI) (CA INDEX NAME)



L45 ANSWER 30 OF 44 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 1997:501848 HCAPLUS

DN 127:197745

TI Water-soluble photosensitive resin composition and black matrix pattern formation using it

IN Miyazawa, Shozo

PA Tokyo Ohka Kogyo Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 12 pp.

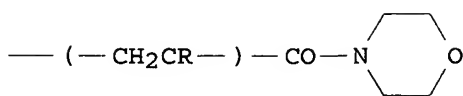
CODEN: JKXXAF

DT Patent

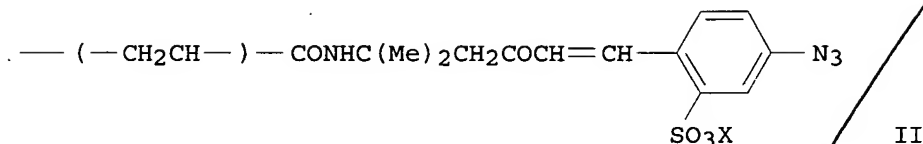
LA Japanese

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|----------|-----------------|----------|
| | ----- | ---- | ----- | ----- | ----- |
| PI | JP 09185163 | A2 | 19970715 | JP 1995-352633 | 19951229 |
| PRAI | JP 1995-352633 | | 19951229 | | |
| GI | | | | | |



I



II

AB The composition contains (A) a polymer having repeating units I and II (R = H, Me; X = Na, K, NH₄) and (B) a water-soluble polymer having a 1,2-glycol bond in its linear chain. The method involves (1) forming a photocurable pattern using the composition, (2) applying a light-absorbing substance thereon, (3) drying, and (4) peeling the pattern and the substance. The composition is useful for a color display tube, etc. The pattern shows good adhesion to a glass substrate and easy-peeling property.

IC ICM G03F007-012

ICS C08F220-58; C08L029-04; C08L033-26; G03F007-033; G03F007-038; G03F007-42; H01J009-227

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 38

IT Optical filters

Photoresists

(glycol bond-containing water-soluble **photosensitive** resin composition for black matrix pattern formation)

IT 55305-94-7DP, Sodium 4-azidobenzaldehyde-2-sulfonate, reaction product with morpholine-based copolymer 129219-09-6DP, Acryloylmorpholine-diacetoneacrylamide copolymer, reaction product with azido compound **194231-43-1DP**, reaction product with azido compound

RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)

(glycol bond-containing water-soluble photosensitive resin composition for

black

matrix pattern formation)

IT **194231-43-1DP**, reaction product with azido compound

RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)

(glycol bond-containing water-soluble photosensitive resin composition for

black

matrix pattern formation)

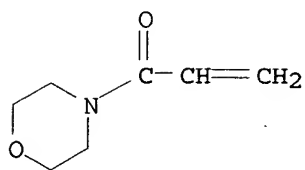
RN 194231-43-1 HCAPLUS

CN 2-Propenamide, N-(1,1-dimethyl-3-oxobutyl)-, polymer with 1-ethenyl-1H-imidazole and 4-(1-oxo-2-propenyl)morpholine (9CI) (CA INDEX NAME)

CM 1

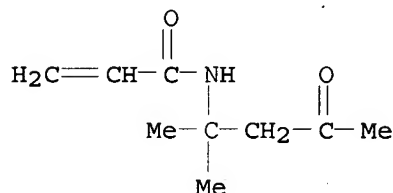
CRN 5117-12-4

CMF C7 H11 N O2



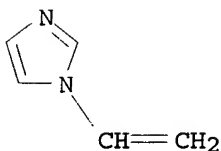
CM 2

CRN 2873-97-4
CMF C9 H15 N O2



CM 3

CRN 1072-63-5
CMF C5 H6 N2



L45 ANSWER 31 OF 44 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 1997:413135 HCAPLUS

DN 127:42277

TI Positive-working photoresist composition showing high resolution power

IN Aoso, Toshiaki; Fujimori, Toru; Yamanaka, Hitoshi; Uenishi, Kazuya

PA Fuji Photo Film Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 56 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|----------|-----------------|----------|
| PI | JP 09106073 | A2 | 19970422 | JP 1995-261635 | 19951009 |
| | JP 3503851 | B2 | 20040308 | | |
| PRAI | JP 1995-261635 | | 19951009 | | |

AB The composition contains (i) a resin containing a basic N and an acid-decomposable

group and (ii) an acid generator sensitive to active/radiation beam. The resin may contain CH₂CR₁C₆H₄OH, CH₂CR₁C₆H₄OR₂, and CH₂CR₁X or CH₂CR₁C₆H₄Y

[R1 = H, Me; R2 = an acid-decomposable group; X = a basic-N-containing heterocycle, CONHR3Z, CO2R3Z (Z = a basic-N-containing group; R3 = alkylene, arylene); Y = a basic-N-containing group].

ICM G03F007-039

ICS G03F007-00; G03F007-004; G03F007-023; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and **Photographic** and Other Reprographic Processes)

Section cross-reference(s): 38, 76

IT **Positive photoresists**

(alkaline-developable pos.-working **photoresist** composition showing high resolution power)

IT 926-02-3DP, tert-Butyl vinyl ether, reaction product with hydrolyzed vinylpyridine-acetoxystyrene copolymer 5292-43-3DP, tert-Butyl bromoacetate, reaction product with hydrolyzed vinylpyridine-acetoxystyrene copolymer 190434-68-5P 190434-69-6P 190434-70-9P 190434-71-0P 190434-73-2P 190434-74-3P 190434-76-5P 190434-77-6DP, hydrolyzed, reaction product with tert-Bu bromoacetate 190434-80-1P **190612-94-3P** 190612-95-4P 190677-60-2P

RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)

(alkaline-developable pos.-working photoresist composition showing high resolution power)

IT 66003-76-7, Diphenyliodonium trifluoromethanesulfonate 66003-78-9, Triphenylsulfonium trifluoromethanesulfonate 142096-70-6 176109-33-4 177786-96-8

RL: CAT (Catalyst use); TEM (Technical or engineered material use); USES (Uses)

(photoacid generator; alkaline-developable pos.-working **photoresist** composition showing high resolution power)

IT **190612-94-3P**

RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)

(alkaline-developable pos.-working photoresist composition showing high resolution power)

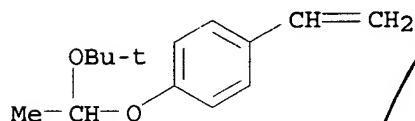
RN 190612-94-3 HCAPLUS

CN Phenol, 4-ethenyl-, polymer with 1-[1-(1,1-dimethylethoxy)ethoxy]-4-ethenylbenzene and 1-[(ethenylphenyl)methyl]-1H-imidazole (9CI) (CA INDEX NAME)

CM 1

CRN 169811-45-4

CMF C14 H20 O2



CM 2

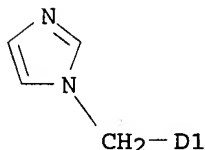
CRN 97427-93-5

CMF C12 H12 N2

CCI IDS



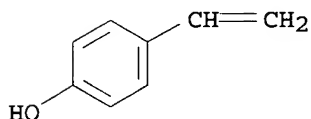
D1-CH=CH₂



CM 3

CRN 2628-17-3

CMF C8 H8 O



L45 ANSWER 32 OF 44 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 1997:281228 HCAPLUS

DN 126:270385

TI **Photosolder resist** composition containing inorganic filler treated with silane coupling agents

IN Kubota, Hiroyuki

PA Toyo Ink Mfg Co, Japan

SO Jpn. Kokai Tokkyo Koho, 11 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|----------|-----------------|----------|
| PI | JP 09043846 | A2 | 19970214 | JP 1995-266576 | 19951016 |
| PRAI | JP 1995-126177 | A | 19950525 | | |

AB The composition contains (A) an active energy ray-curable resin having carboxy group and alc. hydroxy group and (B) an inorg. filler pretreated with a silane coupling agent. The resist composition shows good adhesion to Cu and durability.

IC ICM G03F007-038

ICS G03F007-004; G03F007-027; G03F007-075; H05K003-18; H05K003-28

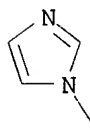
CC 74-5 (Radiation Chemistry, Photochemistry, and **Photographic** and Other Reprographic Processes)

Section cross-reference(s): 76

ST **photosolder resist** inorg filler pretreatment; solder

photoresist inorg filler pretreatment; silane coupling agent solder

RN
CN

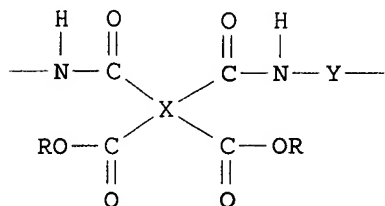


DN

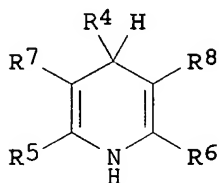
LA Japanese

FAN.CNT 1

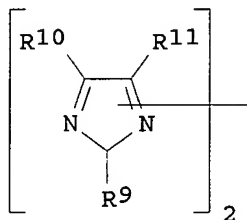
| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|---------------|------|----------|-----------------|----------|
| PI | JP 08254831 | A2 | 19961001 | JP 1995-83365 | 19950315 |
| PRAI | JP 1995-83365 | | 19950315 | | |
| GI | | | | | |



I



II



III

AB The composition contains a polyimide precursor with weight average mol. weight 20,000-100,000 having a repeating unit I (X = tetra-valent organic group; Y = divalent organic group; R, R0 = SiR1R2R3; R1-3 = C1-8 monovalent organic group, H), a dihydropyrimidine compound II [R4 = (substituted) hydrocarbon, R5-6 = alkyl; R7-8 = COOR12, COR12, CN; R12 = alkyl], and hexaarylbiimidazole compound III [R9-11 = (substituted) aryl]. The composition shows high sensitivity and heat resistance and is useful for protective layer of elec. parts.

IC ICM G03F007-075

ICS C08K005-3432; C08K005-3445; C08L079-08; G03F007-004; G03F007-038

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 37, 76

IT Positive photoresists

(photosensitive silyl polyimide composition containing dihydropyridine compound and hexaarylbiimidazole compound)

IT 7189-82-4 21829-25-4, Nifedipine

RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)

(photosensitive silyl polyimide composition containing dihydropyridine compound

and hexaarylbiimidazole compound)

IT 7189-82-4

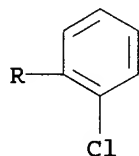
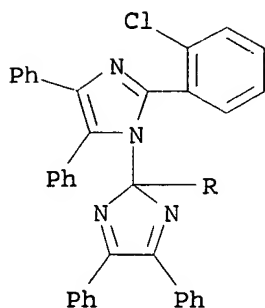
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)

(photosensitive silyl polyimide composition containing dihydropyridine compound

and hexaarylbiimidazole compound)

RN 7189-82-4 HCAPLUS

CN 1H-Imidazole, 2-(2-chlorophenyl)-1-[2-(2-chlorophenyl)-4,5-diphenyl-2H-imidazol-2-yl]-4,5-diphenyl- (9CI) (CA INDEX NAME)



L45 ANSWER 34 OF 44 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 1994:711863 HCAPLUS

DN 121:311863

TI Electrophotographic photoreceptor sheet used in lithographic platemaking

IN Kato, Eiichi; Tashiro, Hiroshi; Ishii, Kazuo

PA Fuji Photo Film Co Ltd, Japan

SO Jpn. Kokai Tokkyo Koho, 65 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|----------|-----------------|----------|
| PI | JP 06027750 | A2 | 19940204 | JP 1992-201812 | 19920707 |
| PRAI | JP 1992-201812 | | 19920707 | | |

AB In the title electrophotog. photoreceptor sheet comprising a conductive support, a photoconductive layer incorporating a photoconductor compound and a binder resin, and a claimed surface layer, the latter contains a binder resin(s) (A) and the photosensitive layer contains a binder resin(s) (B). Binder resin (A) contains a polymer component(s) which yields ≥ 1 CO₂H on reaction, a component(s) which yields ≥ 1 selected from SO₃H, SO₂H, and PO₃H, and ≥ 1 components which yield thermo- or photohardenable groups on reaction. Binder resin (B) (weight average mol. weight 1

$\times 10^3$ -2 $\times 10^4$) possesses the structural repeating unit CHa₁Ca₂(CO₂Q₃) [a₁, a₂ = H, halo, CN, hydrocarbyl; Q₃ = hydrocarbyl] $\geq 30\%$, and polar groups selected from PO₃H, SO₃H, P(O)(OH)Q₁ [Q₁ = hydrocarbyl, OQ₂ (Q₂ = hydrocarbyl)], and cyclic acid anhydride are present in the polymer chain or at 1 end of the polymer chain. The photoreceptor sheet resists background soiling, has superior desensitization characteristics, and gives highly durable lithog. plates.

IC ICM G03G013-28

ICS G03G005-05; G03G005-06; G03G005-08

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

| | | | | | |
|----|--------------|--------------|--------------|--------------|--------------|
| IT | 155838-99-6P | 159319-77-4P | 159319-79-6P | 159319-82-1P | 159319-84-3P |
| | 159319-87-6P | 159319-90-1P | 159319-92-3P | 159319-94-5P | 159319-96-7P |

159319-98-9P 159319-99-0P 159320-01-1P 159320-02-2P 159320-03-3P
 159320-05-5P 159320-06-6P 159320-07-7P **159320-08-8P**
 159320-09-9P 159320-10-2P 159320-11-3P 159320-12-4P 159320-13-5P
 159320-14-6P 159320-18-0P 159320-20-4P 159320-21-5P 159320-22-6P

RL: DEV (Device component use); SPN (Synthetic preparation); **PREP**
(Preparation); USES (Uses)

(electrophotog. photoreceptor sheet surface layer containing)

IT **159320-08-8P**

RL: DEV (Device component use); SPN (Synthetic preparation); **PREP**
(Preparation); USES (Uses)

(electrophotog. photoreceptor sheet surface layer containing)

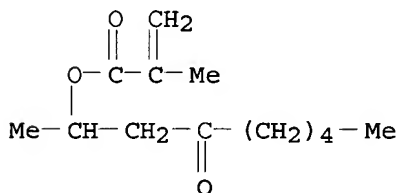
RN 159320-08-8 HCAPLUS

CN Hexanoic acid, 3-[[[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethyl]sulfonyl]oxy]-
 , phenyl ester, polymer with methyl 2-methyl-2-propenoate,
 1-methyl-3-oxooctyl 2-methyl-2-propenoate, N-(4-methyl-3-oxo-4-pentenyl)-
 1H-imidazole-1-carboxamide and oxiranylmethyl 2-methyl-2-propenoate (9CI)
 (CA INDEX NAME)

CM 1

CRN 159320-00-0

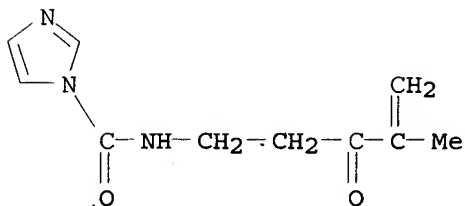
CMF C13 H22 O3



CM 2

CRN 157859-85-3

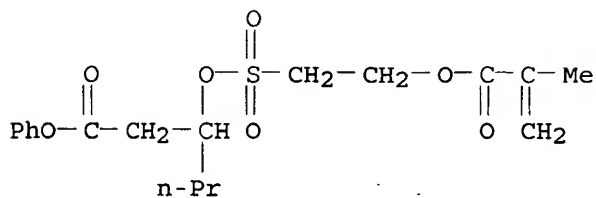
CMF C10 H13 N3 O2



CM 3

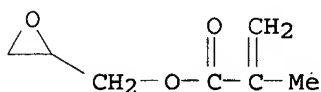
CRN 155839-15-9

CMF C18 H24 O7 S



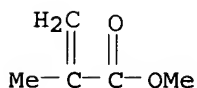
CM 4

CRN 106-91-2
CMF C7 H10 O3



CM 5

CRN 80-62-6
CMF C5 H8 O2



L45 ANSWER 35 OF 44 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1994:334841 HCAPLUS
DN 120:334841
TI Electrophotographic photoreceptor for low-power laser-scanning exposure
IN Kato, Eiichi; Ishii, Kazuo
PA Fuji Photo Film Co Ltd, Japan
SO Jpn. Kokai Tokkyo Koho, 103 pp.
CODEN: JKXXAF

DT Patent
LA Japanese

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|----------|-----------------|----------|
| PI | JP 05150467 | A2 | 19930618 | JP 1991-341737 | 19911202 |
| PRAI | JP 1991-341737 | | 19911202 | | |

AB In the title electrophotog. photoreceptor comprising an inorg. photoconductor, a spectral sensitizer dye, and a binder resin, the latter consists of a star copolymer resin (A) and a graft copolymer (B). Resin (A) is a star-type copolymer (weight average mol. weight 1x10³-2x10⁴) incorporating
≥3 polymer chains based on polymer component (a) based on CHa1:Ca2(CO2R11) [a1,a2 = H, halo, CN, hydrocarbyl; R11 = hydrocarbyl] and polymer component (b) containing ≥1 polar groups selected from PO3H, SO3H, CO2H, P(O)(OH)R1 (R1 =hydrocarbyl, oxyhydrocarbyl), and cyclic acid anhydride group with (a) content ≥30% and (b) content 1-20%. Resin

(B) is a graft copolymer based on specified monomers and a monofunctional macromonomer(s) (weight average mol. weight $\leq 2 \times 10^4$) which has specified polymerizable double bonds at 1 end of the polymer chain which is based on ≥ 1 selected from CHd1:Cd2(V2Q1) and CHd1:Cd2Q2 [V2 = CO2, OCO, CH2OCO, CH2CO2, O, SO2, CO, CONHCO2, CONHCONH, CONHSO2, CONT1, C6H4 (T1 = H, hydrocarbyl); d1,d2 = H, halo, CN, hydrocarbyl, CO2Z11, hydrocarbon group-interposed CO2Z11 (Z11 = H, hydrocarbyl); Q1 = C1-18 aliphatic group, C6-12 aromatic group; Q2 = CN, CONH2, C6H4T2 (T2 = H, halo, hydrocarbyl, alkoxy, CO2Z12 where Z12 = alkyl, aryl, aralkyl)]. The photoreceptor has superior electrostatic and moisture-resistant characteristics.

IC ICM G03G005-05

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT 28572-98-7P 65697-22-5P 89162-02-7P 126969-78-6P 131004-79-0P
 149265-81-6P 152222-87-2P 152222-88-3P 152222-90-7P 152222-91-8P
 152222-92-9P 152222-93-0P 152222-94-1P 152222-96-3P 152222-98-5P
 152222-99-6P 152244-96-7P 155161-47-0P 155161-48-1P
 155161-49-2P 155241-62-6P

RL: PREP (Preparation)

(preparation of star, dithiocarbamate-initiated, for binder resin blend)

IT 152222-99-6P

RL: PREP (Preparation)

(preparation of star, dithiocarbamate-initiated, for binder resin blend)

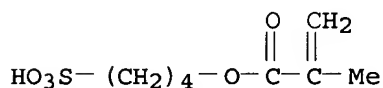
RN 152222-99-6 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-chlorophenyl ester, polymer with 1-ethenyl-1H-imidazole and 4-sulfobutyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 50985-35-8

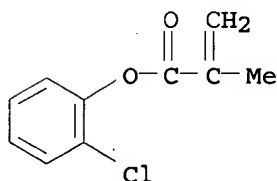
CMF C8 H14 O5 S



CM 2

CRN 18967-23-2

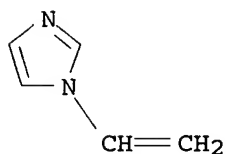
CMF C10 H9 Cl O2



CM 3

CRN 1072-63-5

CMF C5 H6 N2



L45 ANSWER 36 OF 44 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 1994:311461 HCAPLUS

DN 120:311461

TI Electrophotographic photoreceptor for laser-scanning exposure

IN Kato, Eiichi; Ishii, Kazuo

PA Fuji Photo Film Co Ltd, Japan

SO Jpn. Kokai Tokkyo Koho, 53 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|----------|-----------------|----------|
| PI | JP 05165227 | A2 | 19930702 | JP 1991-351258 | 19911213 |
| | JP 3126195 | B2 | 20010122 | | |
| PRAI | JP 1991-351258 | | 19911213 | | |

AB In the title electrophotog. photoreceptor comprising an inorg. photoconductor, a spectral sensitizer dye, and a binder resin, the latter contains ≥ 1 star copolymers incorporating ≥ 3 polymer chains based on polymer component (a) $\text{CHa}_1\text{Ca}_2(\text{CO}_2\text{R}_3)$ [$\text{a}_1, \text{a}_2 = \text{H, halo, CN, hydrocarbyl}$; $\text{R}_3 = \text{hydrocarbyl}$] and polymer component (b) containing ≥ 1 polar groups selected from PO_3H_2 , SO_3H , CO_2H , $\text{P}(\text{O})(\text{OH})\text{R}_1$ ($\text{R}_1 = \text{hydrocarbyl, oxyhydrocarbyl}$), and cyclic acid anhydride group, with component (a) $\geq 30\%$ and component (b) $0.01\text{--}20\%$. The photoreceptor shows good electrostatic and moisture-resistant characteristics.

IC ICM G03G005-05

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 35

IT 25133-97-5P 27155-22-2P, Acrylic acidmethyl acrylatemethyl methacrylate copolymer 28572-98-7P 34134-09-3P 65697-22-5P 89162-02-7P

| | | | | |
|--------------|--------------|--------------|--------------|--------------|
| 126969-71-9P | 126969-78-6P | 131004-79-0P | 146056-80-6P | 149265-81-6P |
| 152222-87-2P | 152222-88-3P | 152222-90-7P | 152222-91-8P | 152222-92-9P |
| 152222-93-0P | 152222-94-1P | 152222-96-3P | 152222-98-5P | |
| 152222-99-6P | 152244-96-7P | 152792-18-2P | 152792-19-3P | |
| 152792-20-6P | 152792-21-7P | 152792-24-0P | 152792-25-1P | |
| 152792-27-3P | 155161-47-0P | 155161-48-1P | 155161-49-2P | 155161-63-0P |
| 155161-64-1P | 155161-65-2P | 155161-66-3P | 155161-67-4P | 155161-68-5P |
| 155161-70-9P | 155161-71-0P | | | |

RL: PREP (Preparation)

(preparation of star, dithiocarbamate-initiated, binder resin from)

IT 152222-99-6P 152792-25-1P

RL: PREP (Preparation)

(preparation of star, dithiocarbamate-initiated, binder resin from)

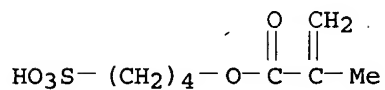
RN 152222-99-6 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-chlorophenyl ester, polymer with 1-ethenyl-1H-imidazole and 4-sulfobutyl 2-methyl-2-propenoate (9CI) (CA

INDEX NAME)

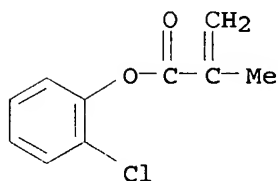
CM 1

CRN 50985-35-8
CMF C8 H14 O5 S



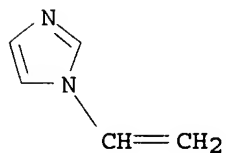
CM 2

CRN 18967-23-2
CMF C10 H9 Cl O2



CM 3

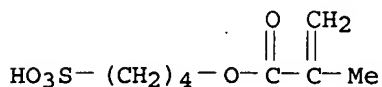
CRN 1072-63-5
CMF C5 H6 N2



RN 152792-25-1 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, ethyl ester, polymer with
1-ethenyl-1H-imidazole and 4-sulfobutyl 2-methyl-2-propenoate (9CI) (CA
INDEX NAME)

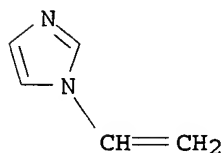
CM 1

CRN 50985-35-8
CMF C8 H14 O5 S



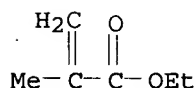
CM 2

CRN 1072-63-5
CMF C5 H6 N2



CM 3

CRN 97-63-2
CMF C6 H10 O2



L45 ANSWER 37 OF 44 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 1993:125868 HCAPLUS

DN 118:125868

TI Photopolymerizable 2-alkyl-1-(2-methacryloyloxyethyl)imidazoles as crosslinking catalysts for epoxy resins

IN Yoshioka, Takashi; Murai, Takayuki

PA Shikoku Chemicals Corp., Japan

SO Jpn. Kokai Tokkyo Koho, 3 pp.

CODEN: JKXXAF

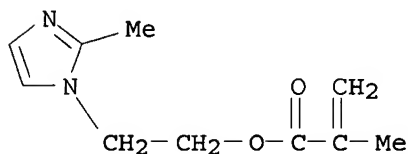
DT Patent

LA Japanese

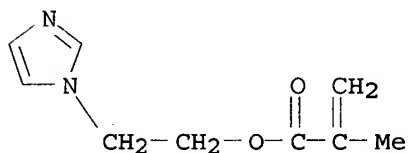
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|--|------|----------|-----------------|----------|
| PI | JP 04308578 | A2 | 19921030 | JP 1991-102083 | 19910405 |
| PRAI | JP 1991-102083 | | 19910405 | | |
| AB | The title imidazoles are useful for curing epoxy resins, giving photocurable products for use as resists . Reacting methacryloyl chloride with 1-(2-hydroxyethyl)-2-undecylimidazole in THF containing Et3N and phenothiazine gave 1-(2-methacryloyloxyethyl)-2-undecylimidazole. | | | | |
| IC | ICM C07D233-60 | | | | |
| | ICS C08G059-40 | | | | |
| CC | 37-6 (Plastics Manufacture and Processing) Section cross-reference(s): 35, 74 | | | | |
| ST | methacryloyloxyethylimidazole curing epoxy photoresist; resist photo methacryloyloxyethylimidazole epoxy; imidazole methacryloyloxyethyl curing epoxy photoresist; crosslinking methacryloyloxyethylimidazole epoxy photoresist; photocuring methacryloyloxyethylimidazole epoxy resin | | | | |
| IT | Resists (photo -, (methacryloyloxyethyl)imidazole-cured epoxy resins | | | | |

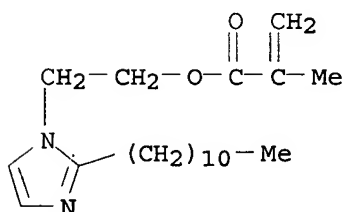
for)
 IT 34375-24-1P 62037-81-4P 146490-90-6P
 RL: PREP (Preparation)
 (preparation of, as epoxy resin hardener and photoresist)
 IT 34375-24-1P 62037-81-4P 146490-90-6P
 RL: PREP (Preparation)
 (preparation of, as epoxy resin hardener and photoresist)
 RN 34375-24-1 HCAPLUS
 CN 2-Propenoic acid, 2-methyl-, 2-(2-methyl-1H-imidazol-1-yl)ethyl ester
 (9CI) (CA INDEX NAME)



RN 62037-81-4 HCAPLUS
 CN 2-Propenoic acid, 2-methyl-, 2-(1H-imidazol-1-yl)ethyl ester (9CI) (CA INDEX NAME)



RN 146490-90-6 HCAPLUS
 CN 2-Propenoic acid, 2-methyl-, 2-(2-undecyl-1H-imidazol-1-yl)ethyl ester
 (9CI) (CA INDEX NAME)



L45 ANSWER 38 OF 44 HCAPLUS COPYRIGHT 2005 ACS on STN
 AN 1991:52858 HCAPLUS
 DN 114:52858
 TI Prevention of light discoloration for organic colorant by using phenyl
 multiazolyl derivative
 IN Sugita, Shuichi; Mizukura, Noboru; Kaneko, Yutaka
 PA Konica Co., Japan
 SO Jpn. Kokai Tokkyo Koho, 14 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|---------------|------|----------|-----------------|----------|
| PI | JP 02197839 | A2 | 19900806 | JP 1989-19298 | 19890126 |
| PRAI | JP 1989-19298 | | 19890126 | | |

GI For diagram(s), see printed CA Issue.

AB An organic colorant containing ≥ 1 Ph multiazolyl derivs. I ($R_1 = H$, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, heterocycle, acyl, sulfonyl, phosphonyl, carbamoyl, sulfamoyl, oxycarbonyl; $R_2 =$ substituent; $X = O, S, NR_3$; R_3 is similar to R_1 ; $n = 0-4$; R_2 may be different at $n \geq 2$; adjoining R_1X and R_2 may form 5-7-membered ring; $A =$ nonmetal atomic group forming imidazolyl, pyrrolyl, pyrazolyl, triazolyl, tetrazolyl) is under prevention of discoloration. Thus, 1-(4'-hydroxyphenyl)imidazole was treated with dodecyl bromide in the presence of NaOMe to give a imidazole derivative II. A color Ag halide **photog.** emulsion containing II showed light **resistance**.

IC ICM G03C007-26
ICS C09D011-00; C09D011-02; C09K003-00; G03C007-392

ICA C07D207-325; C07D233-60; C07D233-61; C07D249-06; C07D249-08; C07D257-04; C07D405-00

CC 74-2 (Radiation Chemistry, Photochemistry, and **Photographic** and Other Reprographic Processes)
Section cross-reference(s): 28, 41

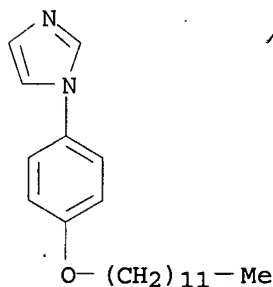
ST discoloration prevention agent heterocycle **photog**; phenyl imidazole discoloration prevention **photog**; color silver halide emulsion discoloration; light **resistance** color **photog** emulsion

IT 131625-76-8P
RL: SPN (Synthetic preparation); **PREP (Preparation)**
(preparation and use of, as discoloration prevention agent for organic colorant in silver halide **photog.** emulsion)

IT 131625-76-8P
RL: SPN (Synthetic preparation); **PREP (Preparation)**
(preparation and use of, as discoloration prevention agent for organic colorant in silver halide **photog.** emulsion)

RN 131625-76-8 HCAPLUS

CN 1H-Imidazole, 1-[4-(dodecyloxy)phenyl]- (9CI) (CA INDEX NAME)



L45 ANSWER 39 OF 44 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 1990:66778 HCAPLUS

DN 112:66778

TI **Photosensitive** epoxy resin compositions for solder
resist of printed circuit board

IN Watabe, Makio; Tanaka, Isamu; Kikuchi, Hiroshi; Oka, Hitoshi

PA Hitachi, Ltd., Japan

KATHLEEN FULLER EIC 1700 REMSON 4B28 571/272-2505

SO Jpn. Kokai Tokkyo Koho, 8 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|---------------|------|----------|-----------------|----------|
| PI | JP 01197520 | A2 | 19890809 | JP 1988-21942 | 19880203 |
| | JP 07021046 | B4 | 19950308 | | |
| PRAI | JP 1988-21942 | | 19880203 | | |

AB Title composition comprises diallyl phthalate prepolymer, a multifunctionalized unsatd. compound, a radical photopolymn. initiator, an epoxy resin, a cationic photopolymn. initiator, and a hardener. The composition shows peeling resistance in impregnation with an alkaline coating bath. Thus, a composition comprising Daiso Dap, trimethylolpropane trimethacrylate, Epikote 142, 2-methyl-1-[4-(methylthio)phenyl]-2-morpholino-1-propanone, Et cellosolve, phthalocyanine green, a silicone oil, dicayndiamide, 2,4-diamino-6-[2'-methylimidazole-(1')]ethyl-s-triazine, and bis[4-(diphenylsulfonio)phenyl]sulfide bishexafluorophosphate was screen-printed onto a circuit board, dried, neg. patterned by UV irradiation, spray developed by CCl₃CH₃, and heated to give a solder resist-coated printed circuit, which was impregnated with an alkaline Cu coating bath to show no peelings.

IC ICM C08G059-40

ICS C08F299-04; C08L063-00

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 76

IT Polymerization catalysts

(cationic **photopolymn.** initiator, for epoxy resin solder **photoresist**, for printed circuit board, with **resistance** against alkaline coating bath)

IT **Resists**

(**photo-**, allyl phthalate and epoxy resin and unsatd. compound for, with resistance against alkaline coating bath)

IT 74227-35-3

RL: USES (Uses)

(cationic **photopolymn.** initiator, for epoxy resin solder **photoresist**, for printed circuit board, with **resistance** against alkaline coating bath)

IT 38668-46-1 50729-78-7

RL: MOA (Modifier or additive use); USES (Uses)

(crosslinking agents, for solder **photoresist**, for printed circuit board)

IT 6652-28-4, Benzoin isopropyl ether 71868-10-5, 2-Methyl-1-[4-(methylthio)phenyl]-2-morpholino-1-propanone

RL: USES (Uses)

(radical **photopolymn.** initiator, for solder **photoresist**, for printed circuit board)

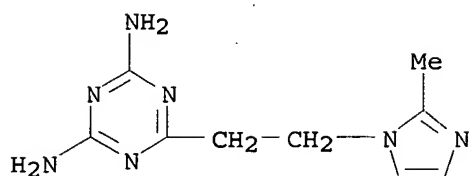
IT 38668-46-1 50729-78-7

RL: MOA (Modifier or additive use); USES (Uses)

(crosslinking agents, for solder **photoresist**, for printed circuit board)

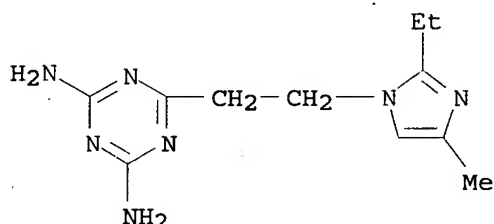
RN 38668-46-1 HCAPLUS

CN 1,3,5-Triazine-2,4-diamine, 6-[2-(2-methyl-1H-imidazol-1-yl)ethyl]- (9CI)
(CA INDEX NAME)



RN 50729-78-7 HCAPLUS

CN 1,3,5-Triazine-2,4-diamine, 6-[2-(2-ethyl-4-methyl-1H-imidazol-1-yl)ethyl]-
(9CI) (CA INDEX NAME)



L45 ANSWER 40 OF 44 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 1989:574861 HCAPLUS

DN 111:174861

TI Preparation and use of polymers with organometallic side chains

IN Steinmann, Alfred

PA Ciba-Geigy A.-G., Switz.

SO Eur. Pat. Appl., 18 pp.

CODEN: EPXXDW

DT Patent

LA German

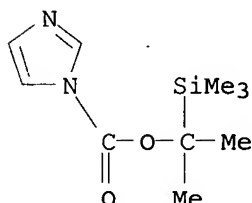
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|---------------------------------------|------|----------|-----------------|----------|
| PI | EP 307353 | A2 | 19890315 | EP 1988-810579 | 19880823 |
| | EP 307353 | A3 | 19900912 | | |
| | R: AT, CH, DE, FR, GB, IT, LI, NL, SE | | | | |
| | US 4965316 | A | 19901023 | US 1988-237472 | 19880829 |
| | CA 1317060 | A1 | 19930427 | CA 1988-576431 | 19880902 |
| | JP 01103611 | A2 | 19890420 | JP 1988-223357 | 19880906 |
| | US 5024916 | A | 19910618 | US 1990-587293 | 19900924 |
| PRAI | CH 1987-3426 | A | 19870907 | | |
| | US 1988-237472 | A3 | 19880829 | | |

AB Photosensitive polymers, useful in the preparation of pos. images, bear side chains of the structure $R_6R_5R_4MC(R_3)(CHR_1R_2)OCOZ-$ [R_1-6 = alkyl, alkoxy, Ph, $PhCH_2$, PhO , $-(MR_7)_2bR_7$ (R_7 = alkyl, alkoxy, Ph, $PhCH_2$, PhO ; $b = 1-6$) or R_1-3 can be H; $M = Si, Ge, Sn, CH_2Si, OSi$; $Z = O, S, imino$]. Esterification of $Me_3SiC(Me)_2OH$ with 4- $ClCO_2C_6H_4CHO$ and reaction of the resulting $Me_3SiC(Me)_2OCO_2C_6H_4CHO-p$ with $MePh_3P+Br-$ and $tert-BuOK$ gave $Me_3SiC(Me)_2OCO_2C_6H_4CH:CH_2-p$ (I). AIBN-initiated polymerization of I in PhMe at 70° gave 60% polymer with number-average mol. weight 42,000, a 10% cyclohexanone solution of which was mixed with p- $PhOC_6H_4S+Ph_2AsF_6-$, spin-coated on a Si wafer, dried, illuminated through a mask at 254 nm and 1-2 mJ/cm², developed, and subjected to reactive-ion etching in an O plasma, enabling the formation of submicron structures.

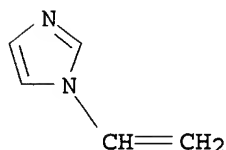
IC ICM C08F030-04

ICS C08F008-42; G03F007-10
ICA C07F007-00
CC 35-4 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 29, 74
IT **Resists**
(photo-, silane derivative polymers, manufacture of)
IT 123340-99-8P 123341-01-5P 123341-03-7P 123341-04-8P 123369-08-4P
123369-09-5P
RL: **PREP (Preparation)**
(preparation of)
IT 123369-09-5P
RL: **PREP (Preparation)**
(preparation of)
RN 123369-09-5 HCAPLUS
CN 1H-Imidazole-1-carboxylic acid, 1-methyl-1-(trimethylsilyl)ethyl ester
(9CI) (CA INDEX NAME)

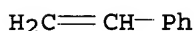


L45 ANSWER 41 OF 44 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1989:564044 HCAPLUS
DN 111:164044
TI Application of vinylimidazole copolymer to deep UV
resist
AU Yoshida, Yasuhiro; Fujioka, Hirofumi; Nakajima, Hiroyuki
CS Mfg. Dev. Lab., Mitsubishi Electr. Corp., Amagasaki, 661, Japan
SO Journal of Photopolymer Science and Technology (1989), 2(1), 139-41
CODEN: JSTEEW; ISSN: 0914-9244
DT Journal
LA English
AB The polymers prepared by radical copolymn. of 1-vinylimidazole (I) and styrene, or 4-vinylimidazole (II) and styrene were evaluated as a resist for KrF excimer laser lithog. Bisazide compds. were used as photosensitizers. By copolymn. of styrene with I or II, the copolymers became hydrophobic, but they were soluble in aqueous acid solution. With the increase of acidity of developer (aqueous acid solution) the copolymer dissoln. rate increased. As styrene unit increased in copolymers, the absorption at 248 nm increased correspondingly. However, they did not go over 35% per 1 µm. The copolymer of II and styrene had good reactive ion etching resistance against both O₂ and CF₄ etching gases. Their values were comparable to conventional novolak based photoresists. The resistance was improved by incorporation of the bisazide compound into the copolymers. The sensitivity curves with KrF excimer laser irradiation in the copolymers with photosensitizers indicated the high sensitivity (<200 mJ) and high contrast. No thickness loss was observed in the region >200 mJ.
CC 74-5 (Radiation Chemistry, Photochemistry, and **Photographic** and Other Reprographic Processes)
IT **Resists**
(photo-, deep-UV, copolymers of vinylimidazole with styrene as)
IT 60755-40-0P, Styrene-1-vinylimidazole copolymer 74535-27-6P

RL: PREP (Preparation)
 (photoresist for deep-UV lithog., preparation and
 properties of)
 IT 60755-40-0P, Styrene-1-vinylimidazole copolymer
 RL: PREP (Preparation)
 (photoresist for deep-UV lithog., preparation and
 properties of)
 RN 60755-40-0 HCAPLUS
 CN 1H-Imidazole, 1-ethenyl-, polymer with ethenylbenzene (9CI) (CA INDEX
 NAME)
 CM 1
 CRN 1072-63-5
 CMF C5 H6 N2



CM 2
 CRN 100-42-5
 CMF C8 H8



L45 ANSWER 42 OF 44 HCAPLUS COPYRIGHT 2005 ACS on STN
 AN 1989:85613 HCAPLUS
 DN 110:85613
 TI Thermal recording material using chromeno compound for improved
 resistance to IR radiation
 IN Kanda, Nobuo; Abe, Yukihiro; Kondo, Mitsuru
 PA Kanzaki Paper Mfg. Co., Ltd., Japan
 SO Eur. Pat. Appl., 30 pp.
 CODEN: EPXXDW
 DT Patent
 LA English
 FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|---|------|----------|-----------------|----------|
| PI | EP 273418 | A2 | 19880706 | EP 1987-119234 | 19871224 |
| | EP 273418 | A3 | 19900418 | | |
| | EP 273418 | B1 | 19931124 | | |
| | R: DE, FR, GB | | | | |
| | JP 63166588 | A2 | 19880709 | JP 1986-314744 | 19861227 |
| | US 4803193 | A | 19890207 | US 1987-137368 | 19871223 |
| PRAI | JP 1986-314744 | A | 19861227 | | |
| OS | CASREACT 110:85613 | | | | |
| GI | For diagram(s), see printed CA Issue. | | | | |
| AB | A thermal recording material contains a colorless dye I [Z = N-containing | | | | |

5-membered ring which may have an attached benzene ring and substituents; R1-R4 = H, C1-12 alkyl, C3-C12 alkenyl or alkynyl, C5-12 cycloalkyl, Ph, Ph-C1-2 alkyl, naphthyl; R1-R4 may form a part of a heterocycle] and a dye developer. The developer may be selected from polyvalent metal salts of aromatic carboxylic acids. The above composition may also contain an aromatic diamine compound. The composition forms images readable by optical character-reading devices. Thus, 3,6-bis(diethylamino)fluorenone was reacted with 2-(2-hydroxyphenyl)indole to obtain 3,6-bis(diethylamino)spiro[fluorene-9,6'-6'-H-chromeno(4,3-b)indole] (II). Three different dispersions of II, 4,4'-isopropylidenediphenol, and stearic acid amide in aqueous Me cellulose were mixed and used to form thermal recording papers. The papers produced images which were stable against heat, IR radiation, and humidity and had high d.

IC ICM B41M005-26

CC 74-12 (Radiation Chemistry, Photochemistry, and **Photographic and Other Reprographic Processes**)

Section cross-reference(s): 41

| | | | | | |
|----|---------------------|--------------|---------------------|---------------------|--------------|
| IT | 118234-22-3P | 118234-23-4P | 118234-24-5P | 118234-25-6P | 118234-26-7P |
| | 118234-27-8P | 118234-28-9P | 118234-29-0P | 118234-30-3P | 118234-31-4P |
| | 118234-32-5P | 118234-33-6P | 118234-34-7P | 118234-35-8P | |
| | 118234-36-9P | 118234-48-3P | 118234-57-4P | 118234-58-5P | |
| | 118234-59-6P | 118234-60-9P | 118234-61-0P | 118234-62-1P | 118234-63-2P |
| | 118234-64-3P | 118234-65-4P | 118234-66-5P | 118234-67-6P | 118234-68-7P |
| | 118234-69-8P | 118234-70-1P | 118234-71-2P | 118234-72-3P | 118234-73-4P |
| | 118234-74-5P | 118234-75-6P | 118234-76-7P | 118234-77-8P | |
| | 118234-78-9P | 118234-79-0P | 118234-80-3P | 118234-81-4P | 118234-82-5P |
| | 118234-83-6P | 118234-84-7P | 118234-85-8P | 118234-86-9P | 118251-70-0P |
| | 118251-72-2P | 118251-73-3P | 118251-74-4P | | |

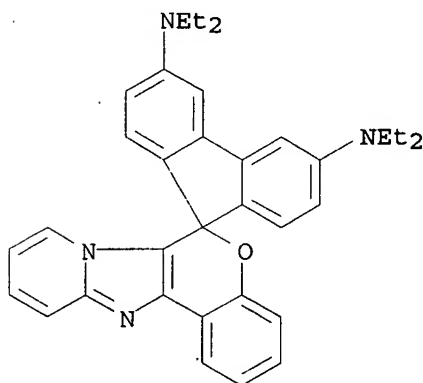
RL: SPN (Synthetic preparation); **PREP (Preparation)**
(preparation and use of, in thermal recording material)

IT **118234-35-8P 118234-36-9P 118234-57-4P 118234-77-8P**

RL: SPN (Synthetic preparation); **PREP (Preparation)**
(preparation and use of, in thermal recording material)

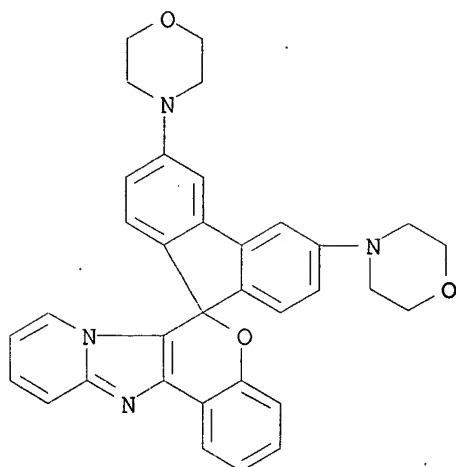
RN 118234-35-8 HCAPLUS

CN Spiro[6H-[1]benzopyrano[4',3':4,5]imidazo[1,2-a]pyridine-6,9'-[9H]fluorene]-3',6'-diamine, N,N,N',N'-tetraethyl- (9CI) (CA INDEX NAME)

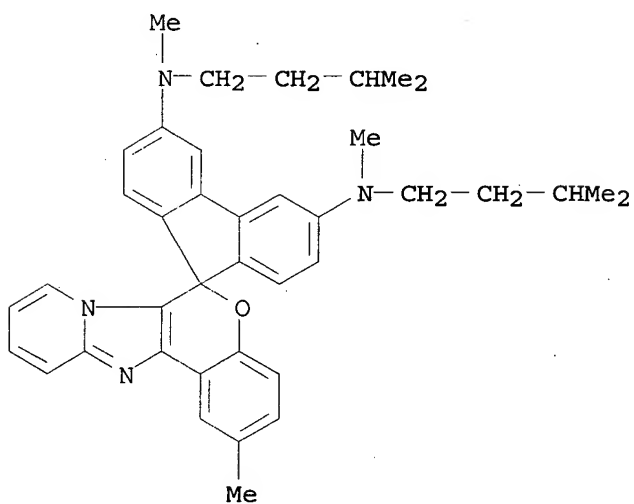


RN 118234-36-9 HCAPLUS

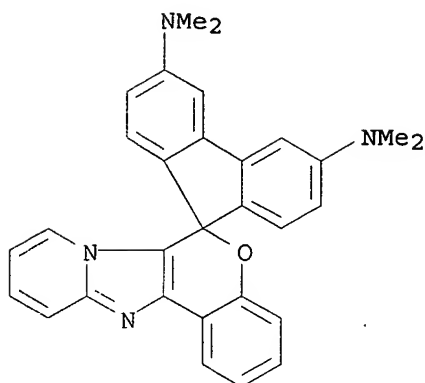
CN Spiro[6H-[1]benzopyrano[4',3':4,5]imidazo[1,2-a]pyridine-6,9'-[9H]fluorene], 3',6'-di-4-morpholinyl- (9CI) (CA INDEX NAME)



RN 118234-57-4 HCAPLUS
 CN Spiro[6H-[1]benzopyrano[4',3':4,5]imidazo[1,2-a]pyridine-6,9'-
 [9H]fluorene]-3',6'-diamine, N,N',2-trimethyl-N,N'-bis(3-methylbutyl)-
 (9CI) (CA INDEX NAME)



RN 118234-77-8 HCAPLUS
 CN Spiro[6H-[1]benzopyrano[4',3':4,5]imidazo[1,2-a]pyridine-6,9'-
 [9H]fluorene]-3',6'-diamine, N,N,N',N'-tetramethyl- (9CI) (CA INDEX NAME)



L45 ANSWER 43 OF 44 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 1987:638210 HCAPLUS

DN 107:238210

TI Adhesive and potting compositions for optoelectronic components

IN Jisova, Vaclava

PA Czech.

SO Czech., 5 pp.

CODEN: CZXXA9

DT Patent

LA Czech

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|--------------|------|----------|-----------------|----------|
| PI | CS 233940 | B1 | 19850314 | CS 1983-7070 | 19830928 |
| PRAI | CS 1983-7070 | | 19830928 | | |

AB Rapid-hardening, IR-transparent, chemical-resistant, water-resistant, mech. strong, heat-resistant adhesives and potting compns. for optoelectronic elements comprise epoxy resins (epoxy equivalent 180-350) 100, N-butylimidazole (I) 2-15, and dye ≤5 parts. Thus, a composition containing 100 parts epoxy resin (epoxy equivalent 200) and 4 parts

I exhibited long workability and hardened at 120°.

IC ICM C09J003-16

ICS C08L063-00; C08K005-34

CC 38-3 (Plastics Fabrication and Uses)

Section cross-reference(s): 74, 76

IT 4316-42-1, N-Butylimidazole

RL: MOA (Modifier or additive use); USES (Uses)

(crosslinking agents, for epoxy resin adhesives and potting compns. for optoelectronic elements)

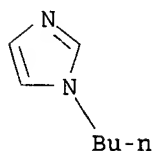
IT 4316-42-1, N-Butylimidazole

RL: MOA (Modifier or additive use); USES (Uses)

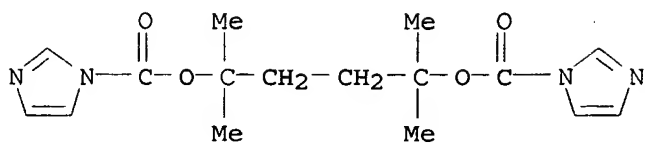
(crosslinking agents, for epoxy resin adhesives and potting compns. for optoelectronic elements)

RN 4316-42-1 HCAPLUS

CN 1H-Imidazole, 1-butyl- (9CI) (CA INDEX NAME)



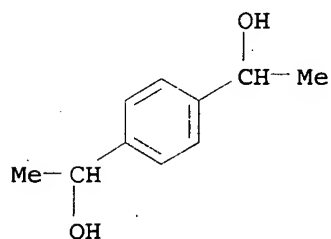
L45 ANSWER 44 OF 44 HCAPLUS COPYRIGHT 2005 ACS on STN
 AN 1987:165977 HCAPLUS
 DN 106:165977
 TI Thermally depolymerizable polycarbonates. V. Acid catalyzed thermolysis of allylic and benzylic polycarbonates: a new route to resist imaging
 AU Frechet, Jean M. J.; Bouchard, Francine; Eichler, Eva; Houlihan, Francis M.; Iizawa, Takashi; Kryczka, Boguslaw; Willson, C. Grant
 CS Dep. Chem., Univ. Ottawa, Ottawa, ON, K1N 9B4, Can.
 SO Polymer Journal (Tokyo, Japan) (1987), 19(1), 31-49
 CODEN: POLJB8; ISSN: 0032-3896
 DT Journal
 LA English
 AB Polymers containing allylic and benzylic carbonate repeating units were prepared by phase-transfer catalyzed polycondensation of activated bis-carbonates or carbamates and diols. The polymers were highly susceptible to thermal depolymn. and revert to small mols. when heated to temps. which vary from 140 to 230° depending on structure. The thermolysis temps. were reduced to well below >100° if catalytic amts. of acid are added to the polycarbonates. The thermolysis or acidolysis of bis(allylic) or benzylic carbonates provided a convenient route to aromatic compds. as demonstrated with both models and polymers. The polycarbonates can be used to formulate highly sensitive resist materials with potential for self-development of pos. images. Some benzylic polycarbonates which produce polymerizable divinyl monomers upon thermolysis can be used to create neg. images in a process which includes both depolymn. and photocrosslinking.
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 IT Resists
 (photo-, allylic and benzylic polycarbonates as, thermally depolymerizable)
 IT 99214-26-3P 107673-57-4P 107845-95-4P 107845-96-5P
 RL: PREP (Preparation)
 (preparation of, resists from)
 IT 102265-61-2P
 RL: PREP (Preparation)
 (preparation of, synthesis of polycarbonate resists in relation to)
 IT 99214-26-3P 107845-95-4P
 RL: PREP (Preparation)
 (preparation of, resists from)
 RN 99214-26-3 HCAPLUS
 CN 1H-Imidazole-1-carboxylic acid, 1,1,4,4-tetramethyl-1,4-butanediyl ester, polymer with α,α' -dimethyl-1,4-benzenedimethanol (9CI) (CA INDEX NAME)
 CM 1
 CRN 98716-64-4
 CMF C16 H22 N4 O4



CM 2

CRN 6781-43-7

CMF C10 H14 O2



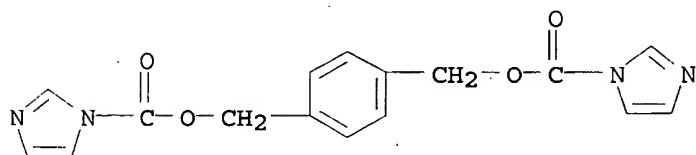
RN 107845-95-4 HCAPLUS

CN 1H-Imidazole-1-carboxylic acid, 1,4-phenylenebis(methylene) ester, polymer with 2-cyclohexene-1,4-diol (9CI) (CA INDEX NAME)

CM 1

CRN 107845-94-3

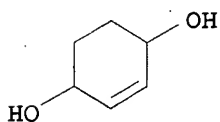
CMF C16 H14 N4 O4



CM 2

CRN 45620-68-6

CMF C6 H10 O2



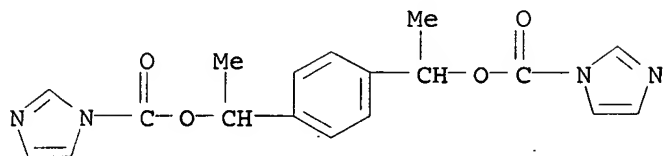
IT 102265-61-2P

RL: PREP (Preparation)

(preparation of, synthesis of polycarbonate resists in relation to)

RN 102265-61-2 HCAPLUS

CN 1H-Imidazole-1-carboxylic acid, 1,4-phenylenediethylidene ester (9CI) (CA
INDEX NAME)



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